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AVIATION TRAINING AND READINESS (T&R) MANUAL,
MARINE AIR TRAFFIC OTROL (MATC),
(SHORT TITLE: T&R MANUAL, MATC)

1. For administrative purposes, the Publications Control Number (PCN) has been reidentified. Change the PCN "10203356800" to read: "10203358200".

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From: Commandant of the Marine Corps
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Subj: AVIATION TRAINING AND READINESS (T&R) MANUAL, MARINE AIR TRAFFIC CONTROL (MATC) (SHORT TITLE: T&R MANUAL, MATC)

Ref: (a) MCO P3500.14G

Encl: (1) LOCATOR SHEET

1. Purpose. To publish policies, procedures and standards regarding the training of LAAD Officers, Section Leaders, and Gunners per reference (a).

2. Cancellation. T&R Manual, MCO P3500.19B, Volume 5, Chapter 7-9.

3. Background. Reference (a) restructures the T&R manual organization from nine volumes to 25 individual Marine Corps orders. This Order prescribes a unique template to provide the aviation commander with standardized programs of instruction. As such, this Order deviates from the Five Paragraph Order Format directed by MCO 5215.1H.

4. Recommendations. Recommended changes to this Order are invited, and will be submitted via the syllabus sponsor and the appropriate chain of command to: Commanding General, Training and Education Command (C 4610), Marine Corps Combat Development Command, 3300 Russell Road, Quantico, VA 22134-5001.

5. Reserve Applicability. This Manual is applicable to the Marine Corps Reserve.

6. Certification. Reviewed and approved this date.

EDWARD HANLON, JR.
By direction

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RECORD OF CHANGES

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# CHAPTER 1

# AIR TRAFFIC CONTROL OFFICER (ATCO)

## 100. INTRODUCTION

1. The purpose of the Marine Aviation Training and Readiness (T&R) program is to provide the commander with standardized programs of instruction for all aviation personnel. The goal is to develop unit warfighting capabilities, not to measure the proficiency of individuals. Syllabi are based on specific performance standards designed to ensure proficiency in core competencies. An effective T&R program is the first step in providing the MAGTF commander with an Aviation Combat Element (ACE) capable of accomplishing any and all of its stated missions. The T&R program provides the fundamental tools for commanders to build and maintain unit combat readiness. Using these tools, training managers can construct and execute an effective training plan that supports the unit's mission essential tasks.

2. Unit training management is the application of the Marine Corps Training Principles and the Systems Approach to Training to satisfy the training requirements of commanders at all levels in order to accomplish their wartime mission. Guidance concerning unit training management and the process for establishing effective unit training management programs are contained in MCRP 3-0A, *Unit Training Management Guide*, and formed the basis for the development of this T&R Manual. Familiarity with MCRP 3-0A will enhance understanding of the Systems Approach to Training used in T&R development and Marine Corps UTM principles.

3. To maintain congruity in aviation and ground T&R programs, CG TECOM (C4610) is coordinating an update to the aviation unit evaluation mechanism. Efforts are underway to incorporate Collective Training Standards (CTS) into aviation T&R manuals. The goal of this effort is to replace MCCRES Mission Performance Standards (MPS) with T&R CTS and utilize the T&R as the unit evaluation mechanism. Like MPS, CTS are criteria that specify mission and functional area unit proficiency standards for combat, combat support, and combat service support units.

4. The effort to replace MCCRES MPS with T&R manual CTS is in the development phase. The concept is to create separate unit chapters in all aviation T&R manuals which contain unit CTS in the form of unit events. CTS will be derived and implemented into T&R manuals using existing unit MCCRES MPS as a baseline. Unit evaluation will be standardized in T&R manuals, not in a separate document. CG TECOM (C4610) plans to cancel unit MCCRES orders as respective unit CTS chapters are approved. Until unit T&R CTS are formally approved, MCCRES shall be utilized as the aviation unit evaluation standard.

## 101. CORE COMPETENCIES/SKILLS

1. Core competency serves as the foundation of the T&R program. Core competencies are those core capabilities and skills which support the Mission Essential Task List (METL) derived from MCWP 3-2 and T/O mission statements, which are realistically expected to be assigned in combat. Core competencies for Air Traffic Control (ATC) are listed in paragraph 101.3.

2. Mission. Marine Air Traffic Control (MATC) conducts operations in support of Marine Corps Air Stations (MCAS), Marine Air Ground Task Forces (MAGTF), joint and coalition operations, and integrates into the Marine Air Command and Control System (MACCS) and Integrated Air Defense System (IADS) whenever possible.

3. Mission Essential Tasks

a. Provide tower, radar/non-radar approach, departure, and en route air traffic control services within assigned airspace.

b. Provide precision and non-precision Navigational Aids (NAVAIDS) and Automatic Carrier Landing System (ACLS) approach services.

c. Integrate, display, and disseminate appropriate information to the designated Joint Forces Air Component Commander (JFACC), Airspace Control Authority (ACA), Area Air Defense Commander (AADC), and adjacent agencies such as the Tactical Air Command Center (TACC), Tactical Air Operation Center (TAOC), Direct Air Support Center (DASC), and Ground Based Air Defense (GBAD) units and coordinate the activation of the Base Defense Zone (BDZ) as part of the IADS.

d. Provide combat and civil airspace management, control, and surveillance.

e. Provide ATC liaison personnel to coordinate ATC related issues between the MACCS and national/international civil ATC systems.

f. Develop, implement, and validate radar and non-radar IFR Terminal Instrument Procedures (TERPS) for use at pre-established and expeditionary airfields and integrate required ATC services into the existing civil/military national/international ATC architectures.

g. Conduct amphibious/expeditionary operations to include the capability to phase control ashore.

h. Conduct MATC combat operations in a Nuclear, Biological, and Chemical (NBC) environment.

4. Detachment Core Capabilities

a. The core capable detachment establishes continuous all weather ATC services at one expeditionary airfield, with an echelon capability, or provides these services at a pre-established airfield. Additionally, the core capable detachment is able to provide mobile ATC services at two Forward Operating Bases (FOB). The detachment is able to provide ATC personnel to support MCASs in accordance with the Fleet Assistance Program (FAP).

b. Combat Crew

1 Watch Commander (WC)
1 Radar Watch Supervisor (RWS)
1 Radar Approach Control (APC)
1 Flight Data/Clearance Delivery Controller (RFD)
1 Data Link Coordinator (DLC)
2 Radar Final Controllers (RFC)
1 Tower Watch Supervisor (TWS)

1 Local Controller (TLC)
1 Ground Controller (TGC)
1 Flight Data Controller (TFD)

NOTE: Number of crews required is driven by airfield operational hours and national/international ATC regulations.

c. MATC Mobile Team Crew (MEU SOC)

1 ATC Officer
3 Controllers
1 NAVAID Technician
1 Communication Technician

NOTE: Denotes notional crew. Actual crew composition will be determined by mission assigned.

## 102. SUMMARY/INDEX OF LIVE/SIMULATED EVENTS

1. Combat Capable Stage. Performed at AC(A1) entry level school located at NATTC Pensacola, Florida.

2. Combat Readiness Stage. Table 1-1 contains a listing of the Combat Readiness training events and table 1-2 contains Combat Readiness knowledge based training events.

Table 1-1.--Combat Readiness Training Events.

| EVENT | GOAL | Page # |
|---|---|---|
| FAM-211 | Six functions of Marine aviation | 1-30 |
| FAM-212 | Mission, task and organization of the MATC MMT | 1-30 |
| FAM-213 | VHF/UHF/HF field radio equipment | 1-30 |
| FAM-214 | Mission and organization of MATCD | 1-31 |
| FAM-215 | MATCD equipment | 1-31 |
| FAM-216 | Mission and organization of MACS | 1-32 |
| FAM-217 | Mission and organization of MACCS | 1-32 |
| FAM-218 | Capabilities and vulnerabilities of MACCS radars | 1-33 |
| FAM-219 | Basic knowledge of data links | 1-33 |
| FAM-220 | TBMCS and HMI | 1-33 |
| SYS-250 | Operate fixed radar equipment | 1-34 |
| SYS-251 | Operate fixed control tower equipment | 1-35 |
| SYS-252 | MATCD equipment characteristics | 1-35 |
| SYS-253 | MATCD communications assets and capabilities | 1-36 |
| SYS-254 | Utilize the AN/TSQ-131 for basic operations | 1-36 |
| SYS-255 | Standard data link symbology | 1-37 |
| SYS-256 | Operate the AN/TSQ-120 Expeditionary Control Tower | 1-37 |
| SYS-257 | Observe MACCS agencies | 1-38 |
| SYS-258 | Operate the AN/TSQ-216 Remote Landing Site Tower | 1-38 |
| SIM-260 | Control simulated precision/surveillance approaches with the AN/TSQ-131 | 1-39 |
| OPS-270 | Perform duties of a RFC | 1-39 |

| EVENT | GOAL | Page # |
|---|---|---|
| OPS-271 | Perform duties of a TGC | 1-40 |
| OPS-272 | Perform encrypted communications | 1-40 |
| CK-280 | Qualify as a RFC | 1-41 |
| CK-281 | Qualify as a TGC | 1-41 |

Table 1-2.--Combat Readiness Knowledge Training Events.

| EVENT | GOAL | Page # |
|---|---|---|
| KFAM-200 | General knowledge of airfield layout | A-3 |
| KFAM-201 | General ATC knowledge | A-5 |
| KFAM-202 | Local area/Airfield specific knowledge | A-5 |
| KFAM-203 | Emergency/Safety knowledge | A-6 |
| KFAM-204 | Weather knowledge | A-6 |
| KFAM-205 | Tower Equipment | A-6 |
| KFAM-206 | Airfield lighting | A-7 |
| KFAM-207 | Strip marking | A-7 |
| KFAM-208 | Radar equipment | A-7 |
| KFAM-209 | Flight schedule knowledge | A-8 |
| KFAM-210 | Aircraft accident/incident reporting knowledge | A-8 |
| KRFC-230 | RFC phraseology/communication knowledge | A-8 |
| KRFC-231 | RFC clearance/coordination knowledge | A-9 |
| KRFC-232 | RFC separation knowledge | A-9 |
| KRFC-233 | RFC LOA and facility directives/memos/ publications | A-10 |
| KTGC-240 | TGC phraseology/communication knowledge | A-10 |
| KTGC-241 | TGC clearance/coordination knowledge | A-10 |
| KTGC-242 | TGC separation knowledge | A-11 |
| KTGC-243 | TGC LOA and facility directives/memos/ publications | A-11 |

3. Combat Qualification Stage. Table 1-3 contains a listing of the Combat Qualification training events.

Table 1-3.--Combat Qualification Training Events.

| EVENT | GOAL | Page # |
|---|---|---|
| FAM-300 | MATCD LOA/SOP/Timeshare/FAP agreements | 1-42 |
| FAM-301 | Site selection for the MATCD | 1-42 |
| FAM-302 | FOBs supported by MMT's | 1-43 |
| FAM-303 | Flight inspection/certification | 1-43 |
| FAM-304 | Introduce TERPS | 1-44 |
| FAM-305 | ATO/ACO/ACP/OPTASKLINK/SPINS | 1-44 |
| FAM-306 | Electronic Warfare | 1-44 |
| FAM-307 | Data link theory | 1-45 |
| FAM-308 | MACCS TADIL interoperability | 1-45 |
| FAM-309 | OPDAT message preparation and use | 1-46 |
| FAM-310 | Phasing control ashore | 1-46 |
| FAM-311 | FAA considerations | 1-46 |
| FAM-312 | ICAO considerations | 1-47 |
| FAM-313 | TBMCS Airspace Deconfliction System (ADS) | 1-47 |

| EVENT | GOAL | Page # |
|---|---|---|
| FAM-314 | JAOC | 1-47 |
| FAM-315 | Embarkation of ATC equipment | 1-48 |
| FAM-316 | Capabilities of VMU | 1-48 |
| SYS-320 | Configure the AN/TSQ-131 for advance operations | 1-49 |
| SYS-321 | TBMCS ACO development | 1-50 |
| SIM-330 | ATC services ISO of FOB | 1-50 |
| SIM-331 | Communications planning | 1-51 |
| SIM-332 | MATCD operations in an NBC environment | 1-51 |
| OPS-340 | ATC tactical crew brief | 1-51 |
| OPS-341 | Flight inspection/certification preparation | 1-52 |
| OPS-342 | Perform as FWO/WC | 1-52 |
| OPS-343 | MATCALS Electronic Protection (EP) measures | 1-53 |
| OPS-344 | Perform as an MMT Leader | 1-53 |
| OPS-345 | MMT OIC for MACG MEU(SOC) Detachment | 1-54 |
| OPS-346 | Plan and employ a Base Defense Zone | 1-54 |
| OPS-347 | Conduct TADIL-B and -C operations | 1-54 |
| QUAL-390 | Qualify as an MMT Leader | 1-55 |
| DESG-391 | Perform as a FWO/WC | 1-55 |
| DESG-392 | Perform as an ATCFO | 1-56 |

4. Full Combat Qualification Stage. Table 1-4 contains a listing of the Full Combat Qualification training events.

Table 1-4.--Full Combat Qualification Training Events.

| EVENT | GOAL | Page # |
|---|---|---|
| FAM-400 | C2 USMC TACAIR in joint operations | 1-56 |
| FAM-401 | C2W | 1-57 |
| FAM-402 | Civil and combat airspace management | 1-57 |
| FAM-403 | ARM countermeasures | 1-57 |
| FAM-404 | JTAO interface | 1-58 |
| FAM-405 | TADIL operations | 1-58 |
| FAM-406 | Knowledge of TACS | 1-59 |
| FAM-407 | AEACS | 1-60 |
| FAM-408 | AADCS | 1-60 |
| FAM-409 | Special information systems aircraft | 1-61 |
| FAM-410 | TBMCS advance planning | 1-61 |
| SIM-430 | Integrated combat airspace and control | 1-62 |
| SIM-431 | MATCD planning problem | 1-63 |
| SIM-432 | MISTEX | 1-64 |
| SIM-433 | RAS | 1-64 |
| OPS-440 | Develop an instrument approach | 1-65 |
| OPS-441 | EMCON/RADCON | 1-66 |
| OPS-442 | ATC liaison officer | 1-66 |
| OPS-443 | ACE planning staff member | 1-67 |
| OPS-444 | Theater missile and air defense planning | 1-67 |
| OPS-445 | Joint combat airspace doctrine | 1-67 |
| OPS-446 | ATO cycle | 1-68 |
| OPS-447 | ACP for joint combat operations | 1-69 |

| EVENT | GOAL | Page # |
|---|---|---|
| OPS-448 | ACO for joint combat operations | 1-69 |
| OPS-449 | Operate in a TACC | 1-70 |

5. Instructor Qualification Stage. Table 1-5 contains a listing of the Instructor Qualification events.

Table 1-5.--Instructor Qualification Events.

| EVENT | GOAL | Page # |
|---|---|---|
| DESG-500 | Be designated as an MMT Leader Instructor. | 1-70 |
| QUAL-501 | Qualify as a WTI. | 1-70 |

6. Operator Core Skills. Core skills are depicted in table 1-6 and directly support the METL for each unit. Core skills shall be a determining factor in developing T&R training requirements. Special skills and training requirements must receive appropriate prioritization and emphasis based on the training need, and the likelihood of those types of missions being assigned during operations.

Table 1-6.--Core Skills and Special Skills Matrix.

| CORE SKILLS | | | | | | SPECIAL SKILLS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| METL | FAM | SYS | SIM | OPS | CK | FAM | SYS | SIM | OPS | QUAL |
| A | 200-215, 300-303, 305, 306, 311, 312, 316 | 250-254, 256, 320 | 260, 330 | 270, 271, 340-345 | 280, 281 | 401, 410 | | 430-432 | 441, 444, 446, 448 | 470 |
| B | 211-215, 300, 301, 303, 305, 306, 311, 312 | 250, 252-254, 320 | 260, 330 | 270, 340-345 | 280 | 402, 410 | | 430-432 | 441, 444, 446, 448 | 470 |
| C | 211-220, 300, 301, 305, 306, 308, 309, 311-314 | 252-255, 257, 320, 321 | 330, 331 | 272, 340, 344-347 | | 400, 401, 403-411 | 420 | 430-432 | 441, 443-449 | 470 |

| CORE SKILLS | | | | | | SPECIAL SKILLS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **METL** | **FAM** | **SYS** | **SIM** | **OPS** | **CK** | **FAM** | **SYS** | **SIM** | **OPS** | **QUAL** |
| **D** | 214, 215, 300, 301, 303, 305, 306, 311-314, 316 | 250, 253, 320, 321 | 330 | 340-345 | | 400, 402, 404-410 | 420 | 430-432 | 441, 443-448 | 470 |
| **E** | 214, 300, 301, 311, 312, 316 | | 330 | 342 | | 402 | | 431, 432 | 442, 443 | 470 |
| **F** | 214, 300, 301, 303-305 | | | 340, 341, 343, 344, 346-348 | | | | 430-432 | 440, 441, 444 | 470 |
| **G** | 211, 214, 300, 301, 302, 310, 315 | 257 | 330, 331 | 340, 342, 344-347 | | 400 | | 430-433 | 444 | 470 |
| **H** | 214, 300, 301, 302 | | 330, 332 | 340, 344, 346, 347 | | | | 430-432 | | 470 |

NOTE: Knowledge based events are listed in Appendix A and have no CRP value. Instructor qualification stage falls under METLS A through H.

## 103. UNIT TRAINING POLICIES

1. The unit's training program emphasizes qualifications and the overall combat readiness of the unit. Individual training serves as the building block for overall unit readiness. However, unit training will never be compromised for the training of a select, few individuals. Squadron and battalion commanding officers will ensure that this training philosophy is implemented. Unit training must predominate, and squadrons must tailor their training plans to ensure unit combat readiness.

2. The training of Marines to perform as an integral aviation unit in combat lies at the heart of the T&R program. Unit readiness and individual readiness are directly related. Individual training and the mastery of individual core skills serve as the building blocks for unit combat readiness. A Marine's ability to perform those critical skills required in combat is essential.

3. Commanders shall ensure that all tactical training is conducted to a MCCRES standard. The MCCRES, as outlined in MCO P3501.1, is the unit training standard, and all syllabus events shall be tailored to meet MCCRES requirements. Commanders at all levels are responsible for effective aviation training. The conduct of training in a professional manner consistent with Marine Corps standards cannot be over emphasized.

4. Commanders must be cognizant of the numerous factors affecting unit training on a daily basis. Factors all commanders must address include, but are not limited to:

a. Efficiency. Time and resources expended are measurements of training efficiency. Commanders must ensure that all training increases combat readiness. Unit personnel shall thoroughly plan and effectively execute training to maximize the return on their time and effort.

b. Individual Differences. Commanders must recognize the differences inherent in each individual and should mold flexible training programs to accommodate those differences.

c. Decentralization of Training. The lowest echelon possible shall be responsible for conducting training. Each senior level of command must monitor subordinate commands to ensure safe and efficient training requirements.

5. Commanders shall provide personnel the opportunities to attend formal and operational level courses of instruction as required by this Manual. Attendance at all formal courses must enhance the warfighting capabilities of the unit.

6. Risk Management. Operational Risk Management (ORM) is a process to aid commanders in accomplishing their missions while protecting the force. Commanders, leaders, maintainers, planners and schedulers should integrate risk assessment in the decision making process and implement hazard controls to eliminate risk or reduce it to an acceptable level.

7. MACCS Integrated System Training. All elements of the MACCS shall maintain the capability to effectively function as part of an integrated airspace command and control system. In that large exercises may not always offer sufficient training opportunity for all crew members, and in many cases do not offer sufficient latitude to refine capability upon arrival, the MACCS should conduct MACCS Integrated System Training Exercises (MISTEX) on a regular basis to qualify units and personnel per their respective T&R syllabus. MISTEXs should focus on the establishment of necessary communications and datalinks between MACCS agencies, and incorporate sufficient simulation and Marine Simulation Events List (MSEL) items to exercise and analyze system integration, crew coordination, and critical information flow wherever possible. Tactical Digital Information Link (TADIL) capable agencies should conduct frequent "Link" training exercises to maintain proficiency.

## 104. ATC OFFICER TRAINING PROGRESSION PHILOSOPHY

1. Air Traffic Control Officer (ATCO) training is unique amongst other MACCS officer training because of the requirement to function in tactical and civilian ATC environments simultaneously, whether assigned to a Marine Air

Traffic Control Detachment (MATCD) or MCAS. The ATCO provides Marine aviation the requisite interface required to conduct wartime operations and peacetime training exercises, integrating seamlessly into the U.S. National Airspace System (NAS) or a sovereign nation's airspace. The extensive training and qualification requirements which controllers are required to meet, under both Federal Aviation Administration (FAA) and international regulations, ensures the ability of Marine aviation to operate safely and legally anywhere in the world.

2. ATC officer training utilizes a building block approach. At the entry level school (100-level), the officer is taught ATC regulations, procedures, and operating techniques. Basic skills required by the officer are taught using state of the art simulation and intensive classroom instruction. Upon completion of the MOS school, the officer possesses the same certification obtained by FAA controllers graduating from the National FAA Air Traffic Control School. This training enables the controller to understand and apply ATC rules and regulations, qualify and perform functions of a controller in the MATCD or MCAS. This training also introduces the officer to ATC concepts, doctrine and capabilities.

3. At the 200-level, the officer applies the skills and information obtained at the 100-level while assigned to an MCAS. The initial individual core skills are learned and mastered in this level. Basic ATC skills are learned using a mix of live aircraft and simulation. Training progresses incrementally and includes introduction to the MATCD equipment, the MACCS, and the Marine Air Traffic Control Mobile Team (MMT). This phase culminates with the officer achieving Naval Air Training and Operating Procedures Standardization (NATOPS) qualification as a Radar Final Controller and Tower Ground Controller.

4. At the 300-level, the officer is introduced to MACCS integration, the functions and capabilities MATC brings to the system, and to advanced ATC and airspace management concepts. The ATC officer will gain experience within the MACCS by serving with the MATCD supporting Marine Air Ground Task Force (MAGTF) doctrine. Operational planning, logistics, and embarkation considerations are introduced. The officer qualifies as an MMT Leader, serves as an MATCD WC, and an MATC FWO.

5. At the 400-level, the ATC officer is exposed to advanced MACCS integration and employment of the MATCD equipment within a joint environment. The officer serves in a Marine Air Control Group (MACG) detachment on a Marine Expeditionary Unit (MEU), as an MACCS airspace management liaison for the MAGTF, and with joint/coalition forces, Federal Aviation Administration (FAA), and International Civil Aviation Organization (ICAO), where the officer develops contingency plans and operations. The officer gains experience as an ATCFO, MATCD commander, and a MACG MEU detachment OIC.

6. At the 500-level of training, the ATC officer is exposed to graduate level Marine Aviation Command and Control curriculum at the Weapons Tactics Instructors Course. Upon completion, the officer is designated as a Weapons and Tactics Instructor and is given the secondary MOS of 7277.

## 105. TRAINING PROGRESSION MODEL FOR ATCO

1. The Officer Progression Model for the ATCO is depicted in figure 1-1. This model depicts the **logical progression of qualifications** within a unit.

The Combat Capable Phase is achieved at the completion of initial MOS entry level school.

2. The Combat Ready Phase should take the officer who has completed initial MOS skills training and make the officer proficient in core competencies. With successful completion of the Combat Ready Phase, unit personnel move to the Combat Qualification Phase.

3. The Combat Qualification Phase is that portion of the model that produces combat leaders and fully qualified members. The personnel that are being trained in the Combat Qualification phase are those Marines a commanding officer feels are capable of directing the actions of subordinates during wartime scenarios.

4. The Full Combat Qualification Phase contains special skills and qualifications. These skills or qualifications are not prerequisite to combat qualification or the ability to function as combat leaders, but are those for which a certain number of trained individuals or crews must be maintained to accomplish special missions or tasks.

## ATCO Progression Model

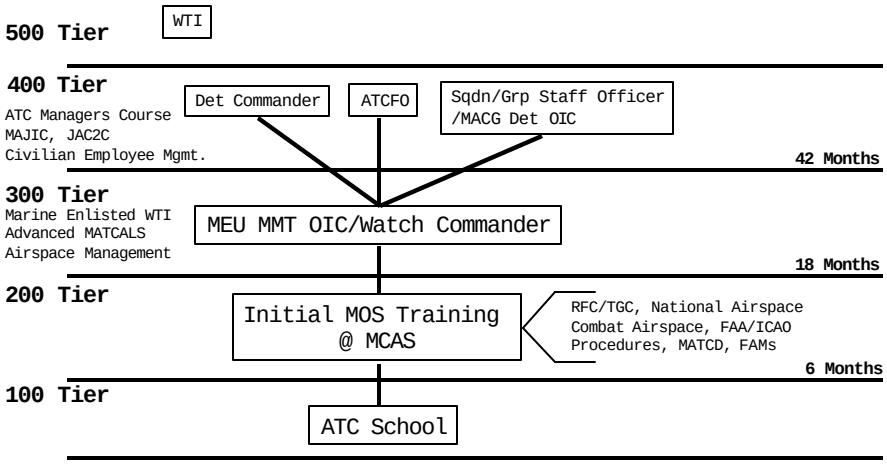


Figure 1-1.--Air Traffic Control Officer Progression Model.

5. The training progression model provides training officers with a valuable tool to develop training plans. With a clear progression of qualifications delineated, and an emphasis on the qualification of Combat Capable and Combat Ready personnel, training officers have the ability to produce viable training plans. Units will use the model as a point of departure to generate weekly, monthly, quarterly and annual training plans.

## 106. PROGRAM OF INSTRUCTION (POI) FOR ATC OFFICERS

### 1. Basic or Transition ATC Officer

| WEEKS | COURSE/PHASE | ACTIVITY |
|---|---|---|
| 1-16 | Combat Capable Training | NATTC |
| 17-68 | Combat Ready Training | MACS/MCAS |
| 69-182 | Combat Qualification Training | MACS/MCAS |

| WEEKS | COURSE/PHASE | ACTIVITY |
|---|---|---|
| 183-260 | Full Combat Qualification Training | MACS/MCAS |

2. Refresher ATC Officer

| WEEKS | COURSE/PHASE | ACTIVITY |
|---|---|---|
| 1-26 | Combat Ready Training | MACS/MCAS |
| 27-130 | Combat Qualification Training | MACS/MCAS |
| 131-218 | Full Combat Qualification Training | MACS/MCAS |

107. SPECIAL DESIGNATIONS

1. ATC Officer Qualification. An ATCO is given a secondary MOS of 7277 upon completion of WTI. A copy of the graduation certificate shall be placed in the individual MACCS performance record.

| WEEKS | COURSE/PHASE | ACTIVITY |
|---|---|---|
| 6 | WTI | MAWTS-1 |

110. GROUND/ACADEMIC TRAINING

1. Academic training shall be conducted for each phase/stage of the syllabus. Commanders are strongly encouraged to incorporate the lectures in table 1-7 into their training plans. Where indicated, standardized academic training materials exist and may be obtained from the activity listed as the sponsor.

Table 1-7.--Recommended T&R Lectures.

| LECTURE CODE | LECTURE TITLE | SPONSOR |
|---|---|---|
| | **200-Level: Combat Ready Training** | |
| A-01* | MAGTF Organization | MCCES |
| A-02* | MACCS Organization | MCCES |
| | The Six Functions of Marine Aviation | |
| A-03* | Control of Aircraft & Missiles | MAWTS-1 |
| A-04* | Offensive Air Support | MAWTS-1 |
| A-05* | Assault Support | MAWTS-1 |
| A-06* | Electronic Warfare | MAWTS-1 |
| A-07* | Aerial Reconnaissance | MAWTS-1 |
| A-08* | Anti-Air Warfare | MAWTS-1 |
| A-09* | Air Tasking Order/Special Instructions | MCCES |
| A-10* | MACCS Training Management | Local MACG |
| A-11* | MACCS Reference Material | MCCES |
| A-12* | Local AOR Contingencies & OP PLANS | Local MACG |
| A-13* | ROE Overview | Local MACG |
| A-14* | MACCS Communications | MAWTS-1 |
| A-15* | TBMCS Overview | MAWTS-1 |
| A-16* | Data Link Symbology | Local MACG |
| A-17* | Manual Crosstell Procedures | Local MACG |
| A-18* | Encryption & Authentication Procedures | MCCES |

| LECTURE CODE | LECTURE TITLE | SPONSOR |
|---|---|---|
| A-19* | COMSEC & Crypto Handling | MCCES |
| | **300-Level: Combat Qualified Training** | |
| B-01* | Missile and UAV Threat to the MAGTF | MAWTS-1 |
| B-02* | Fixed Wing Threat to the MAGTF | MAWTS-1 |
| B-03* | Rotary Wing Threat to the MAGTF | MAWTS-1 |
| B-04* | REC Threat | MAWTS-1 |
| B-05* | Armor Threat to the MAGTF | MAWTS-1 |
| B-06* | AOR Specific Threat & OP PLANS | Local MACG |
| | MACCS Agencies | |
| B-07* | TACC | MAWTS-1 |
| B-08* | TAOC | MAWTS-1 |
| B-09* | DASC | MAWTS-1 |
| B-10* | ATC Detachment | MAWTS-1 |
| B-11* | LAAD Bn | MAWTS-1 |
| B-13* | MWCS | MAWTS-1 |
| B-14* | AC2W-ISR | MAWTS-1 |
| B-15* | Multi TADIL Network | MAWTS-1 |
| B-16* | USMC Aviation Ordnance | MCCES |
| B-17* | Phasing Control Ashore | MAWTS-1 |
| B-18* | Airspace Planning/Management (Combat Airspace) | Local MACG |
| B-19* | Tanker Management | MAWTS-1 |
| B-20* | Armed Reconnaissance | MAWTS-1 |
| B-21* | UAV Overview | MAWTS-1 |
| B-22* | Link Architecture & Procedures | Local MACG |
| B-23* | Introduction to Personnel Recovery | MAWTS-1 |
| B-24* | NEO Execution | MAWTS-1 |
| B-25* | Execution Checklist | MAWTS-1 |
| | **400-Level: Full Combat Qualified Training** | |
| C-01* | Integrated Combat Airspace Command & Control ($ICAC^2$) | Local MACG<br>MAWTS-1 |
| C-02* | Joint Air Operations | MAWTS-1 |
| C-03* | TBM and CM Defense | MAWTS-1 |
| C-04* | JTAO Procedures | MCCES |
| C-05* | Law of War and ROE | MAWTS-1 |
| C-06* | SIS Aircraft | MAWTS-1 |

(*) The lecture code is standardized throughout all MACCS related syllabi, and is used to link the ATRIMS software to a specific T&R event within this syllabus. Lecture codes may not be listed sequentially.

2. Academic training listed in table 1-8 is recommended for personnel assigned to the ATC MOS.

Table 1-8.--ATC Academic Syllabus.

| COURSE / CLASS TITLE | SPONSOR |
|---|---|
| Air Traffic Controller (ACA1) | NATTC |
| Combat Capable MACCS Familiarization Course | NATTC |
| Combat Ready MACCS Familiarization Course | MACS/MCAS |
| Combat Qualification MACCS Familiarization Course | MACS/MCAS |
| MAWTS-1 Tactical Data Systems within the MACCS Course | MACS/MCAS |
| Introduction to Amphibious Embarkation | MCI 04.7 |
| Fixed Wing Embarkation | MCI 04.11 |
| Antenna Construction and Propagation of Radio Waves | MCI 25.15 |
| Communications for the FMF Marine | MCI 25.20 |
| Communications Security | MCI 25.25 |
| VHF (FM) Field Radio Equipment | MCI 25.30 |
| HF/UHF Field Radio Equipment | MCI 25.30 |
| Chemical Warfare Defense | MCI 57.6 |
| Nuclear Warfare Defense | MCI 57.7 |
| Amphibious Warfare School Non-resident Program | MCI 8500 |

3. External academic courses of instruction available to complete the syllabus are listed below:

| COURSE | ACTIVITY |
|---|---|
| Joint Aerospace Command and Control Course (JAC2C) | C2WS |
| Military Airspace Management Course | KEESLER, AFB |
| Advanced MATCALS Operator's Course | NATTC |
| MATCD Mobile Team Leaders Course | MAWTS-1 |
| ATC Management Course | NATTC |
| Multi-TADIL Joint Interoperability Course | JMTS |
| Weapons and Tactics Instructor Course | MAWTS-1 |
| Civilian Employee Management | HRO |

## 111. TRAINING REFERENCES

1. Tables 1-9 through 1-15 provide training references which shall be utilized to ensure safe and standardized training procedures, performance steps, grading criteria, and equipment operation.

Table 1-9.--FAA Training References.

| FAA | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| FAA 7110.65 | Air Traffic Control Manual |
| FAA 7110.10 | Flight Services |
| FAA 7210.3 | Facility Operation and Administration |
| FAA 7400.8 | Special Use Airspace |
| FAA 7220.1 | Certification and Rating Procedures |
| FAA 7340.1 | Contractions |
| FAR 91 | General Operating and Flight Rules |
| | Aeronautical Information Manual (AIM) |
| | IFR Supplement |
| | VFR Supplement |
| | Low Altitude United States |

| FAA | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| | High Altitude United States |
| FAA Handbook OAP 8200.1 | U.S. Standard Flight Inspection Manual |
| | Notices to Airmen (NOTAM) |
| AP1 A | Area Planning for North and South America |
| AP1 B | Military Training Routes for North and South America |
| | Local Sectional |
| DOC-4444/501 | ICAO Rules of the Air and ATC Service |
| | Airfield Operations Manual (AOM) |
| | Facility Manual (FACMAN) |
| | Daily Flight Schedule |
| | RATCF DAIR Operator's Manual |
| | Facility Directives |
| | Letters of Agreement |
| | Facility Memorandums |
| | Facility Forms |
| | Pilot Controller Handbook (PCH) |

Table 1-10.--Navy Training References.

| NAVY | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| SECNAVINST 5216.5C | Memorandum of Agreement |
| OPNAVINST 5510.1 | Department of the Navy Information and Personnel Security Program Regulation |
| OPNAVINST 3770.2 | Airspace Procedures Manual |
| OPNAVINST 3722.16 | U.S. Standard Flight Inspection Manual |
| NAVAIR 00-80T-114 | ATC Facilities Manual |
| NAVAIR 00-80T-115 | Expeditionary Airfields |
| NAVAIR 51-50AAA-2 | Airfield Markings |

Table 1-11.--Marine Corps Training References.

| MARINE CORPS | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| MCDP 6 | Command and Control |
| MCWP 3-2 | Aviation Operations |
| MCWP 3-22 | Anti-Air Warfare |
| MCWP 3-22.2 | SEAD |
| MCWP 3-23 | OAS |
| MCWP 3-24 | Assault Operations |
| MCWP 3-25 | Control of Aircraft and Missiles |
| MCWP 3-25A | Multi-Service Procedures for JATC |
| MCWP 3-25B | Multi-Service Brevity Codes |
| MCWP 3-25C | Introduction to TADIL-J |
| MCWP 3-25D | Integrated Combat Airspace Command and Control |
| MCWP 3-25.3 | MACCS Handbook |
| MCWP 3-25.4 | TACC Handbook |
| MCWP 3-25.5 | DASC Handbook |
| MCWP 3-25.7 | TAOC Handbook |
| MCWP 3-25.8 | MATCD Handbook |

| MARINE CORPS | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| MCWP 3-25.9 | MACCS Communications Handbook |
| MCWP 3-11.2 | Marine Rifle Squad |
| MCWP 3-11.3 | Scouting and Patrolling |
| MCWP 3-11.4 | Helicopterborne Operations |
| MCWP 3-11.4A | Helicopter Insert/Extraction |
| MCWP 3-17 | Engineer Operations |
| MCWP 3-31.5 | Ship to Shore Movement |
| MCWP 3-33 | Military Operations Other Than War (MOOTW) |
| MCRP 3-33A | Counter-Guerilla Operations |
| MCWP 3-33.2 | Civil Disturbance |
| MCWP 3-33.6 | Humanitarian Assistance Operations |
| MCWP 3-36 | Command and Control Warfare |
| MCWP 3-36.1 | Electronic Warfare |
| MCWP 3-37 | MAGTF NBC Defense Handbook |
| MCWP 3-37A | NBC Field Handbook |
| MCWP 3-37.5 | NBC Defense of Fixed Sites, Ports, and Airfields |
| MCWP 6-2 | MAGTF C-2 |
| MCWP 6-22 | Communications and Information Systems |
| MCWP 6-22A | Talk II SINCGARS |
| MCRP 6-22D | Field Antenna Handbook |
| MCRP 3-02E | Individual Guide to Terrorism |
| MCWP 5-1 | Marine Corps Planning Process |
| MCWP 5-11 | MAGTF Aviation Planning |
| MCWP 5-11.1A | Aviation Planning Documents |
| MCO 1510.28A | Marine Air Traffic Control (ATC) and ATC Maintenance Personnel Training, Qualification, and Proficiency Records |
| MCO 3501.9B | Marine Corps Combat Readiness Evaluation System (MCCRES) |
| MCO 5600.20 | Marine Corps War Fighting Publication System |
| ATO/ACO | Air Tasking Order/Air Control Order |
| CMS-1 | Communications Security Material System Manual |
| ACP | Aviation Campaign Plan |
| SPINS | Special Instructions |

Table 1-12.--Maintenance Training References.

| MAINTENANCE | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| | MATCALS Controller Handbook |
| TM 2000 Series | HMMWV and Tactical Quiet Generator |
| TM 119-MA-OMI-010 | Part II Expeditionary Control Tower Equipment Basic Course SA2257TSQ-120 |
| | MATCALS System Operation Manual |
| | MATCALS Operator's Handbook |

Table 1-13.--MAWTS-1 Training References.

| MAWTS-1 | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| | MAWTS Course Catalog |
| | MAWTS-1 ASP |

| MAWTS-1 | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| | MAWTS-1 SOP |
| | MAWTS-1 MACCS Reference Guide |

Table 1-14.--MCI Training References.

| MCI COURSES | |
|---|---|
| **MCI** | **TITLE** |
| 25.30 | VHF (FM) Field Radio Equipment |
| 25.32 | HF/UHF Radio Equipment |

Table 1-15.--Joint Multi-Service and Allied Publications Training References.

| JOINT MULTI-SERVICE AND ALLIED PUBS | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| Joint Pub 1 | Joint Warfare of the US Armed Forces |
| Joint Pub 1-02 | DOD Dictionary of Military and Associated Terms, March 1994 |
| Joint Pub 0-2 | Unified Action Armed Forces |
| Joint Pub 3-0 | Doctrine for Joint Operations |
| Joint Pub 3-01-2 | Joint Doctrine for Theater Counter Air/Air Defense |
| Joint Pub 3-01-3 | Air Defense from Overseas Land Areas |
| Joint Pub 3-01.5 | Doctrine for Joint Theater Missile Defense |
| Joint Pub 3-52 | Doctrine for Joint Airspace Control in a Combat Zone |
| Joint Pub 3-56.1 | Command and Control for Joint Air Operations/Service Operations |
| Joint Pub 3-56-23 | Air Control/Air Defense Procedures |
| Joint Pub 3-56.24 | Tactical Command and Control Planning Guidance and Procedures for Joint Operations |
| Joint Pub 5-03.1 | Joint Operations Planning and Execution System |
| Module 1 | Introduction to the JTAO Interface, JTAO CBT Modules |
| Module 2 | Introduction to TADIL Operations, JTAO CBT Modules |
| Module 4 | Introduction to Naval Warfare, JTAO CBT Modules |
| Module 5 | NTDS and ATDS, JTAO CBT Modules |
| Module 6 | Ground Elements of the Theater Air Control System (TACS), JTAO CBT Modules |
| Module 7 | Airborne Elements of the Air Control System (AEACS), JTAO CBT Modules |
| Module 8 | Army Air Defense Command and Control System (AADCCS), JTAO CBT Modules |
| Module 9 | Service and Joint Communications Systems in the JTAO Interface, JTAO CBT Modules |
| | TBMCS Operator/Technician Course Advance Sheets |
| | ADS Software User's Manual (SUM) |
| | Operator Familiarization Course Training Materials for the Advanced Planning System (APS) |
| | Air Operations Center, ACCI 13, 1 Feb 95 |
| | Air Combat Command (ACC) C4I Systems Guide, Vol I, HQ ACC/SC, 24 Dec 1994 |
| | A History of the Contingency Theater Automated Planning System (CTAPS), Part One, Background, HQ TAC, Jan 91 |

| JOINT MULTI-SERVICE AND ALLIED PUBS | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| | Software User's Manual (SUM) for the Human-Machine-Interface (HMI) of the Theater Battle Management Core System (TBMCS), Version 5.1, 31 Jan 97 |
| | Air Combat Command Computer Systems Squadron, Langley Air Force Base, VA 23665-2091 |
| ACCI 13-1OC | Air Operations Center |
| ACCR 55-44 | Theater Air Control System Modular Control System |
| AFM 2-1 | Tactical Air Operations, Counter Air, Close Air Support and Air Interdiction |
| FM 44-100 | U.S. Army Air Defense Operations |
| FM 44-100-2 | Air Defense Reference Handbook |
| FM 44-85 | Patriot Battalion and Battery Operations |
| FM 44-63 | FAADS/SHORAD Operations, Jane's Land Based Air Defense |
| FM 100-103 | Army Airspace Command and Control in a Combat Zone |
| Joint Pub 3.0 | Operations, September 1993 Air Combat Command Instruction 13, February 1995 |
| | ICAC2 Multi-service Procedures for Integrating Airspace Command and Control in the Combat Zone |
| ATP-40 | Doctrine for Airspace Control in Times of Crisis and War |

120. LIVE/SIMULATOR EVENT TRAINING

1. Combat Capable Training

| STAGE | EVENTS | HOURS | PERCENT |
|---|---|---|---|
| ACA1 SCHOOL NATTC PENSACOLA | 27 | 580.0 | 60.00% |

2. Combat Ready Stage of Training

| STAGE | EVENTS | HOURS | PERCENT |
|---|---|---|---|
| FAMILIARIZATION | 10 | 24.0 | 3.00% |
| SYSTEMS | 9 | 154.0 | 4.80% |
| SIMULATIONS | 1 | 10.0 | 0.70% |
| OPERATIONS | 3 | 62.0 | 1.50% |
| CHECK | 2 | 4.0 | 5.00% |
| COMBAT READY TOTALS: | 25 | 254.0 | 15.00% |

3. Combat Qualification Stage of Training

| STAGE | EVENTS | HOURS | PERCENT |
|---|---|---|---|
| FAMILIARIZATION | 17 | 45.0 | 8.50% |
| SYSTEMS | 2 | 22.0 | 1.50% |
| SIMULATION | 3 | 48.0 | 3.00% |
| OPERATIONS | 8 | 72.0 | 7.00% |
| QUALIFICATION | 3 | 48.0 | 0.0% |
| COMBAT QUALIFICATION TOTALS: | 33 | 235.0 | 20.00% |

4. Full Combat Qualification Stage of Training

| STAGE | EVENTS | HOURS | PERCENT |
|---|---|---|---|
| FAMILIARIZATION | 11 | 30.0 | 1.10% |
| SIMULATIONS | 4 | 50.0 | 0.80% |
| OPERATIONS | 10 | 474.0 | 3.10% |
| FULL COMBAT QUALIFICATION TOTALS: | 25 | 554.0 | 5.00% |

5. Instructor Stage of Training

| STAGE | EVENTS | HOURS | PERCENT |
|---|---|---|---|
| MMT LEADER INSTRUCTOR | 1 | 240.0 | 0.00% |
| WTI | 1 | 400.0 | 0.00% |

6. Special Skills Stage of Training

| STAGE | EVENTS | HOURS | PERCENT |
|---|---|---|---|
| MMT Leader Designation | 1 | N/A | 0.00% |
| FWO/WC Designations | 1 | N/A | 0.00% |
| ATCFO Designation | 1 | N/A | 0.00% |

## 130. LIVE/SIMULATOR EVENT PERFORMANCE REQUIREMENTS

1. General. The majority of the Air Traffic Control Officer syllabus is ground training and requires in-depth integration within the MACCS. Likewise, development of MAGTF training involving extensive integration with applicable elements of the MAGTF is mandatory in the development of a Combat Qualified ATCO. Training not conducted in the live training environment shall be replaced with simulation where applicable as indicated in the condition code.

a. Live Training. Training event condition codes listed as **L** (live) in this syllabus designate training to be conducted without the aid of simulator devices. Radar Final Control (RFC) and Tower Ground Control (TGC) certification shall be obtained at a MCAS.

b. Simulator Training. Training event condition codes listed as **S** (simulator), **L/S** (live preferred/simulator optional), and **S/L** (simulator preferred/live optional) in this syllabus designate training to be conducted on the 15G33, 15G20, or MATCALS simulator.

2. Prior Qualification. ATC officers who have been previously qualified, but have been out of the MOS for 24 months or longer will be required to complete the Refresher program of instruction.

3. Syllabus Assignment. Basic and Transition ATC officers are required to complete the entire syllabus. Refresher ATC officers will complete those syllabus requirements designated **R** in the syllabus description.

4. Minimum Performance Time for Syllabus "Write-Off"/Designations. Personnel may receive credit for successful completion of any syllabus requirement (except qualifications) upon either a written, oral, or practical demonstration of proficiency, at the commanding officer's discretion.

Completion of 70% of any syllabus requirement (except qualifications) may be "written-off" as complete at the discretion of the designated evaluator. Qualifications require a completed performance evaluation, and the designation signed by the commanding officer.

5. Evaluation of Training. Evaluation of those portions of the syllabus which are academic in nature will be conducted by either written/oral examination or a combination of the two means. Operational and system related subjects will be evaluated by practical application means whenever possible. Performance evaluation to qualify for mission qualifications and designations will be conducted per T&R Manual, Administrative, and the standardized evaluation forms located in the Appendix C to this syllabus.

## 131. COMPONENTS OF A T&R EVENT

1. General. An event contained within a T&R manual is an individual or collective training standard and contains seven or eight components, dependent on the level in which they are contained:

| 1/ | 2/ | 3/ | 4/ | 5/ | 6/ | |
|---|---|---|---|---|---|---|
| OPS-XXX | 0.5 | T,C,R,Z,E | | EQUIP | L/S | (NS) |

Goal. The title of a unit of work which needs to be done in the performance of a Marine's duties. It is a clearly stated performance-oriented action requiring learned skills and knowledge, i.e., Engage a rotary winged aircraft.

Requirement. The condition(s) set for the real-world or combat circumstances in which the tasks are to be performed. They indicate what is provided (equipment, tools, materials, manuals, aids, etc.), environmental constraints or conditions under which the task is performed, and any specific cues or indicators to which the performer must respond. When resources or safety requirements limit the conditions, this should be stated.

Performance Standards. The performance standard indicates the basis for judging the effectiveness of the performance. It consists of a carefully worded statement which identifies the proficiency level expected when the task is performed. It is not guidance, it is inviolate. Performance standards are specified in terms of accuracy, speed, sequencing, quality of performance, adherence to procedural guidelines, etc.

Performance Steps. *Listed for 100-level T&R events only.* Performance steps are the actions or decisions required to fulfill proficiency established by the standard. The major performance steps which are required to perform the task to proficiency are listed in the order of performance. Minor steps are not listed.

Prerequisite. Provides a listing of academic training or other T&R events which must be completed prior to satisfying the task.

Reference. Listing of doctrinal or reference publications which may assist the trainee in satisfying the performance standards,

or the trainer in evaluating the effectiveness of task completion.

Ordnance. A listing of ordnance types and quantities required to satisfy the task.

External Syllabus Support. A listing or description of the external support requirements which may be required to satisfy completion of the task. May include range requirements, support aircraft, targets, training devices, or other personnel and equipment.

NOTES:

1/ Events are coded per Appendix B of T&R Manual, Administrative.

2/ Projected Event Duration is furnished as a planning tool.

3/ Denotes the applicable Program of Instruction (Basic POI is understood). POI Codes: **T** = transition; **C** = conversion; **R** = refresher; **Z** = reserve.

4/ An "E" indicates an Evaluated event.

5/ The equipment or activity sub-category is not used in the ATC syllabus.

6/ Condition Code: **L** = live training; **S** = simulator training; **L/S** = live preferred/simulator optional; **S/L** = simulator preferred/live optional; **N** = Night; **NS** = Night Vision Device; Where contained within **( )** denotes optional conditions.

## 132. COMBAT CAPABLE TRAINING

1. Purpose. To develop the basic knowledge of air traffic control rules, procedures and operations. Completion of this formal course of instruction, AC(A1) School at Naval Air Technical Training Center (NATTC) Pensacola, Florida is mandatory to satisfy this requirement. The 100-level (Combat Capable training) does not require refly. Upon completion of this portion of the training syllabus the individual is 60% trained in MATC operations and is Combat Capable.

a. Prerequisites

- Appropriate Medical certificate.
- 18 years old upon completion of course.
- GT 105.
- US Citizenship.

b. Classroom and Simulator Event Training (27 Events, 580 Hours)

FAM-100 34.0

Goal. Introduce weather as applied to ATC.

Requirement. Describe aviation weather to include:

(1) Basic weather characteristics.
(2) Weather hazards.

(3) Aviation weather observations.
(4) Aviation weather forecasts.
(5) Weather advisories.
(6) Weather observing programs.
(7) Aviation sequence reports.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. AC 00-6A, AC 00-45C, and NAVMETOCCOMINST 3141.2.

FAM-101 24.0

Goal. Introduce airspace, navigation, and time as applied in ATC.

Requirement. Describe the National Airspace System (NAS), time conversions, and basic navigation.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65, NAVAIR 00-80V-49, and Airman's Information Manual (AIM).

FAM-102 3.0

Goal. Introduce Special Use Airspace (SUA) used by the military.

Requirement. Describe SUA and controller responsibilities within each.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65 and AIM.

FAM-103 23.0

Goal. Introduce Navigational Aids (NAVAIDS).

Requirement. Describe basic radio theory and NAVAIDS.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65, NAVAIR 00-80T-112, Navy Electricity and Electronics training Series (NEETS), and AIM.

FAM-104 24.0

Goal. Introduce charts and publications used in ATC.

Requirement. Given aeronautical charts and publications, locate information and complete statements in accordance with the Flight Information Publications (FLIP) program.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. General Planning (GP) section of the Department of Defense (DOD) FLIP program.

FAM-105 8.0

Goal. Introduce communications as applied in ATC.

Requirement. Describe communication procedures used in ATC.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65 and AIM.

FAM-106 18.0

Goal. Introduce airport design and ATC equipment.

Requirement. Describe airport design and ATC equipment.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. Advisory Circular 150/5070-6A, NAVFAC P-80, NAVAIR 51-50AAA-2, NAVAIR 00-80T-114, NAVAIR 00-80R-14, and AIM.

FAM-107 24.0

Goal. Introduce general ATC procedures.

Requirement. Describe general ATC procedures to include:

(1) General control.
(2) Weather information.
(3) Federal Aviation Regulation (FAR) Part 91.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65 and FAR Part 91.

FAM-108 32.0

Goal. Introduce ATC terminal procedures.

Requirement. Select statements that describe general ATC procedures used in a terminal environment.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65.

FAM-109 10.0

Goal. Introduce emergencies and special handling.

Requirement. Describe handling of emergency aircraft and special situations in a control tower environment.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65.

FAM-110 16.0

Goal. Introduce non-radar procedures.

Requirement. Describe general non-radar procedures as applied in ATC.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65.

FAM-111 16.0

Goal. Pass the Airmen’s Written Test (AWT).

Requirement. Conduct a thorough review of all information taught in FAM-100 through FAM-110.

Performance Standards. Pass the AWT with a minimum passing score of 70%.

Reference. FAR Part 65.

FAM-112 18.0

Goal. Control tower indoctrination.

Requirement. Describe the different operating positions in a control tower and the individual responsibilities of each.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65, Navy Millington Facility Manual, and NAVAIR 00-80T-114.

FAM-113 10.0

Goal. Introduce basic radar knowledge.

Requirement. Describe the different operating positions in a radar facility, define basic radar theory, and identify associated equipment.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. NAVAIR 00-80T-114.

FAM-114 26.0

Goal. Introduce basic radar services provided by ATC.

Requirement. Describe basic radar services and procedures set by ATC.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65.

FAM-115 14.0

Goal. Introduce Airport Surveillance Radar (ASR).

Requirement. Describe terms and procedures used by an ASR Final Controller.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65 and Navy Millington Facility Manual.

FAM-116 12.0

Goal. Introduce Precision Approach Radar (PAR).

Requirement. Describe terms and procedures used by a PAR Final Controller.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65 and Navy Millington Facility Manual.

FAM-117 22.0

Goal. Introduce arrival control.

Requirement. Describe terms and procedures used by an Arrival Controller.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65 and Navy Millington Facility Manual.

FAM-118 4.0

Goal. Introduce the Marine Air Traffic Control and Landing System (MATCALS).

Requirement. Describe the components and basic operation of the MATCALS, to include:

(1) AN/TPS-73 Air Traffic Control Subsystem (ATCS).
(2) AN/TPN-22 Automatic Landing System (ALS).
(3) AN/TSQ-131 Control and Communication Subsystem (CCS).

Performance Standards. Execute the following functions:

(1) Load FOC software into MMD via Magnetic Tape Unit (MTU).
(2) Load FOC software into MMD via Serial Data Bus (SDB).
(3) Set up an MMD for surveillance usage (ADC).
(4) Set up an MMD for a Final Controller (FC) Trainee.
(5) Set up a Final Control (FC) simulation scenario.
(6) Set up a Arrival Control (ADC) simulation scenario.

Reference. MATCALS Standard Operations Manual

SYS-120 4.0

Goal. Introduce the CCS equipment.

Requirement. Identify and describe the equipment found in the CCS, to include:

(1) Processor Display Set (PDS).
(2) Cartridge Magnetic Tape Unit (CMTU).
(3) Line Printer.
(4) Wind Indicator.
(5) TADIL-B modem.
(6) Digitizer Switching Set (DSS).
(7) Control and Distribution Set (CDS).
(8) Radios.
(9) Intercom.
(10) Telephones.
(11) TADIL-C.
(12) TADIL-B.

Performance Standards. The trainee will identify equipment listed above by visual sight with a minimum 70% accuracy rate.

Prerequisite. FAM-118.

SIM-130 32.0

Goal. Introduce basic tower operations.

Requirement. Observe and begin to apply basic tower operations in a Static Lab.

Performance Standards. Utilizing proper phraseology and tower procedures, the trainee will demonstrate the proficiency to progress to the Tower Operator Training System (TOTS).

Prerequisite. FAM-112.

SIM-131 76.0

Goal. Perform as a control tower operator.

Requirement. Using the 15G32 Tower Operator Training System (TOTS), perform as the following:

(1) Flight Data Operator in accordance with FAA 7110.65 and applicable instructions while observing all safety precautions.
(2) Ground Control Operator in accordance with FAA 7110.65 and applicable instructions while observing all safety precautions.
(3) Local Control Operator in accordance with FAA 7110.65 and applicable instructions while observing all safety precautions.

Performance Standards. Pass a performance test with a minimum passing score of 70% on each operating position.

Prerequisite. SIM-130.

SIM-132 34.0

Goal. Perform as an ASR Final Controller.

Requirement. Utilizing the 15G31 voice-recognition training device, perform the duties of an ASR Final Controller in accordance with FAA 7110.65 and applicable instructions while observing all safety precautions.

Performance Standards. Pass a performance test with a minimum passing score of 70%.

Prerequisite. FAM-115.

SIM-133 34.0

Goal. Perform as a PAR Final Controller.

Requirement. Utilizing the 15G31 voice-recognition training device, perform the duties of a PAR Final Controller in accordance with FAA 7110.65 and applicable instructions while observing all safety precautions.

Performance Standards. Pass a performance test with a minimum passing score of 70%.

Prerequisite. FAM-116.

SIM-134 16.0

Goal. Identify and vector an aircraft.

Requirement. Utilizing the 15G31 voice-recognition training device, identify and vector an aircraft through a series of corridors.

Performance Standards. An aircraft shall be vectored from its initial position to the approach gate without touching the sides of the corridors or the airspace boundary.

Prerequisite. FAM-117.

SIM-135 37.0

Goal. Perform as an Arrival Controller.

Requirement. Utilizing the 15G31 voice-recognition training device, perform the duties of an Arrival Controller in accordance with FAA 7110.65 and applicable instructions while observing all safety precautions.

Performance Standards. Pass a performance test with a minimum passing score of 70%.

Prerequisite. FAM-134.

SIM-136 9.0

Goal. Perform as a MATCALS basic equipment operator.

Requirement. Perform the functions of a MATCALS basic equipment operator while operating in all modes of operation, while observing safety precautions to include:

(1) Arrival departure Control (ADC) Mode.
(2) Final Control (FC) Mode.
(3) Training Modes.

Performance Standards. Pass a performance test with a minimum passing score of 70%.

Prerequisite. SYS-120.

## 133. COMBAT READY TRAINING

1. Purpose. To develop proficiency in ATC tower and radar operations. Upon completion of this portion of the training syllabus, the officer is 75% trained in MATC operations and is Combat Ready. Syllabus requirements are designated as Familiarization (FAM), System (SYS), Simulation (SIM), Operations (OPS), and Check (CK).

a. Prerequisite. Successfully complete the 100-level of this syllabus.

b. Academic Training. In addition to MAWTS ASP lessons located in table 1-5, some events require the controller to be familiar with knowledge syllabus references located in Appendix A of this syllabus. All knowledge syllabus events must be covered in an oral or written exam. The minimum passing score is 80%.

c. Live and Simulator Event Training (24 Events, 252 Hours)

2. Familiarization Training (10 Events, 24 Hours)

FAM-211 2.0 T,R L Z

Goal. Introduce the six functions of Marine aviation.

Requirement. Describe the six functions of Marine aviation, to include:

(1) AAW.
(2) OAS.
(3) Assault support.
(4) Electronic warfare.
(5) Reconnaissance.
(6) Control of aircraft and missiles.

Performance Standards. Pass an exam with a minimum score of 80%.

Prerequisite. Lecture A-01 through A-08.

Reference. MCWP 3-25.3 and MAWTS-1 ASP.

FAM-212 2.0 T,R L Z

Goal. Introduce the mission, tasks, and organization of the MATC Mobile Team (MMT).

Requirement. State the mission, tasks, and organization of the MMT, to include:

(1) Mission of the MMT.
(2) Personnel and equipment requirements.
(3) Site set up and tear down.
(4) Site insertion/extraction.
(5) Planning requirements.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. MMT SOP and MCWP 3-25.8.

FAM-213 5.0 T,R L/S Z

Goal. Introduce VHF/UHF/HF field radio and associated equipment.

Requirement. Identify the capabilities of VHF/UHF/HF field radio and associated equipment to include:

(1) AN/PRC-104 HF.
(2) AN/PRC-113 UHF/VHF (AM).

(3) AN/PRC-119 SINCGARS VHF (FM).
(4) AN/GRC-171 (V) (Tower).
(5) AN/GRC-171 (V) (TADIL-C).
(6) AN/GRC-211.
(7) AN/URC-94 (V).
(8) AN/VRC-82.
(9) KG-84C.
(10) KY-58 and 99.
(11) KIR-1C.
(12) KY-75.
(13) KYK-13.
(14) KOI-18.
(15) ARC-210.
(16) CYZ-10.
(17) AN/PRC-117F.
(18) AN/PRC-138.
(19) KY-99.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. MCWP 6-22, MAWTS-1 ASP, MCI 25.30, and MCI 25.32.

FAM-214 2.0 T,R L Z

Goal. Introduce the mission, tasks, and organization of the MATCD.

Requirement. Introduce the mission, tasks, and organization of the MATCD to include:

(1) Mission of the MATCD.
(2) Relationship of the MATCD to the Marine Air Control Squadron (MACS).
(4) Relationship of the MATCD to the MACCS.
(5) MAGTF employment capability of a MATCD as applied to:
    (a) Marine Expeditionary Force.
    (b) Marine Expeditionary Brigade.
    (c) Marine Expeditionary Unit.
(6) Special Purpose MAGTF.
(7) Site set-up and tear down.
(8) Insertion and extraction.
(9) The three operational sections of a MATCD.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. MAWTS-1 ASP, NAVAIR 00-80T-115, and MCWP 3-25.8.

FAM-215 3.0 T,R L Z

Goal. Introduce the MATCD equipment.

Requirement. Describe the capabilities of all MATCD equipment to include:

(1) AN/HD-1099, Air Conditioner.
(2) AN/MEP-006A, 60 kW, 60Hz, Generator with Loadbank.

(3) AN/MEP-531 Generator.
(4) VM-1503 Mobilizer.
(5) 9503 Mobilizer.
(6) M1022 Mobilizer.
(7) M998, HMMWV.
(8) SM-170, Maintenance Vans.
(9) AN/TPN-30A, Marine Remote Area Approach Landing System.
(10) AN/TPS-73, Air Traffic Control Subsystem.
(11) AN/TPN-22, All-weather Landing Subsystem.
(12) AN/TSQ-131, Control and Communication Subsystem.
(13) AN/TRN-44, TACAN.
(14) AN/TSQ-216, Remote Landing Site Tower.
(15) AN/TSQ-120, Expeditionary Control Tower.
(16) AN/TRC-195, Mobile Control Tower.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. TM 2000 series, MAWTS-1 MACCS Reference Guide, and MCWP 3-25.8.

FAM-216 2.0 T,R L Z

Goal. Introduce the mission, tasks, and organization of the MACS.

Requirement. State the mission, tasks, and organization of the MACS to include:

(1) TAOC Detachment.
(2) EW/C Detachment.
(3) MATCD.
(4) MAGTF's MACS employment options as applicable:
    (a) Marine Expeditionary Force.
    (b) Marine Expeditionary Brigade.
    (c) Marine Expeditionary Unit.
    (d) Special Purpose MAGTF.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. MAWTS-1 MACCS Reference Guide, MAWTS-1 ASP, and MCWP 3-25.3.

FAM-217 2.0 T,R L Z

Goal. Introduce the role, mission, and organization of the MACCS.

Requirement. State the role, mission, and organization of the MACCS, to include:

(1) The fundamental mission, combat force structure and organization.
(2) The basic air control/air defense operational agencies, their missions and organization within the MACCS.
(3) The roles, functions, ranks, job titles and chain of command of key decision-making personnel in the TACC, TAOC, DASC, and MATCD.

(4) Capabilities, functions and configurations of the MACCS agencies:
(a) Tactical Air Command Center (TACC).
(b) Tactical Air Operations Center (TAOC).
(c) Sector Anti-Air Warfare Center (SAAWC).
(d) Early Warning Control Site (EW/C).
(e) Direct Air Support Center (DASC).
(f) Marine Air Traffic Control Detachment (MATCD).
(5) Identify the mission and capabilities of LAAD Bn, MWCS, and VMU.

Performance Standards. Pass an exam with a minimum score of 80%.

Prerequisite. Lecture A-02 and A-11.

Reference. MCWP 3-25.3 through MCWP 3-25.8, MAWTS-1 ASP, and MAWTS-1 MACCS Reference Guide.

FAM-218 2.0 T,R L Z

Goal. State the capabilities and vulnerabilities of MACS radars.

Requirement. State the capabilities and vulnerabilities of MACS radars to include:

(1) MACS radar systems.
(2) Frequency band width.
(3) ECCM.
(4) Range and altitude of each radar.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. Basic Radar Principles (#10031) MAWTS-1 ASP, MCWP 3-25.7, and MCWP 3-25.8.

FAM-219 2.0 T,R L Z

Goal. Introduction to basic Tactical Digital Information Link (TADIL).

Requirement. State basic TADIL knowledge to include:

(1) Definition of TADIL.
(2) Identify existing TADILs.
(3) TADILs utilized by the Marine Corps.
(4) TADILs utilized by the MATCD.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. MAWTS-1 ASP.

FAM-220 2.0 T,R L Z

Goal. Introduce the Theater Battle Management Corps System (TBMCS) and the Human Machine Interface (HMI).

Requirement. Describe TBMCS and the Human Machine Interface (HMI) to include:

(1) Role of TBMCS as a tool for command and control.
(2) Purpose of TBMCS mission applications used within the Joint Air Operation Center (JAOC) and/or the TACC.
(3) Flow of data within TBMCS applications to produce the Air Tasking Order.
(4) TBMCS contribution to joint interoperability.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. Air Combat Command (ACC) C4I Systems Guide, Vol I, HQ ACC/SC, 24 Dec 1994. A History of the Contingency Theater Automated Planning System (CTAPS), Part One, Background, HQ TAC, Jan 91. Software User's Manual (SUM) for the Human-Machine-Interface (HMI) of the Theater Battle Management Core System (TBMCS). Air Combat Command Computer Systems Squadron, Langley Air Force Base, VA 23665-2091.

3. Systems Training (9 Events, 154.0 Hours)

SYS-250 2.0 T L/S Z

Goal. Operate fixed radar equipment.

Requirement. Properly utilize all equipment in a radar facility.

Performance Standards. Operate the following radar equipment:

(1) Search Radar.
(2) Precision Radar.
(3) Transmitter/receiver control panel(s).
(4) Backup/emergency transmitter/receiver location and controls.
(5) Intercom units.
(6) Telephones.
(7) Altimeter.
(8) Wind instruments.
(9) Clocks.
(10) NAVAID monitors.
(11) Console lighting.
(12) Cooling and heating controls.
(13) Emergency alert system.
(14) Fire extinguishers.
(15) Emergency power cutoff.
(16) FDEP/FDIO.
(17) Personal Computer.
(18) Weather reporting monitor.
(19) VISCOM.
(20) Simulator.

Prerequisite. FAM-202.

Reference. Facility Manual.

SYS-251 2.0 T L/S Z

Goal. Operate fixed control tower equipment.

Requirement. Properly utilize all equipment in a tower.

Performance Standards. Operate the following equipment:

(1) Transmitter/receiver control panel(s).
(2) Backup/emergency transmitter/receiver location and controls.
(3) Airfield lighting console/computer.
(4) Intercom units.
(5) Telephones.
(6) Altimeter.
(7) Aldis lamp.
(8) Wind instruments.
(9) Clocks.
(10) NAVAID monitors.
(11) Console and cab lighting.
(12) Cooling and heating controls.
(13) P. A. system.
(14) Emergency alert system.
(15) Fire extinguishers.
(16) Emergency power cutoff.
(17) Traffic tabulators.
(18) FDEP/FDIO.
(19) BRANDS/BRITE.
(20) Personal Computer.
(21) Weather reporting monitor.

Prerequisite. FAM-203.

Reference. Facility Manual.

SYS-252 40.0 T,R L/S Z

Goal. Demonstrate knowledge of all MATCD equipment characteristics.

Requirement. Apply operational knowledge of all MATCD equipment through practical application, to include:

(1) AN/HD-1099, Air Conditioner.
(2) AN/MEP-006A, 60 kW, 60Hz, Generator with Loadbank.
(3) AN/MEP-531 Generator.
(4) VM-1503 Mobilizer.
(5) M1022 Mobilizer.
(6) M998, HMMWV.
(7) TSM-170, Maintenance Vans.
(8) AN/TPN-30, Marine Remote Area Approach Landing System.
(9) AN/TPS-73, Air Traffic Control Subsystem.
(10) AN/TPN-22, All-Weather Landing Subsystem.
(11) AN/TSQ-131, Control and Communication Subsystem.
(12) AN/TSQ-216, Remote Landing Site Tower.
(13) AN/TRN-44, TACAN.
(14) AN/TRC-195, Portable Tower.

(15) AN/TSQ-120, Expeditionary control tower.
(16) AN/GRC-171(V)1.
(17) AN/GRC-171(V)2.
(18) AN/GRC-211.
(19) AN/URC-94(V)2.
(20) AN/VRC-82.

Performance Standards. The officer will visually identify and provide general specifications for the above equipment with a minimum of 70% accuracy.

Prerequisite. FAM-215 and FAM-219.

Reference. TM 2000 series and MAWTS-1 MACCS Reference Guide.

SYS-253 5.0 T,R L/S Z

Goal. Operate MATCD communication assets and identify its capabilities.

Requirement. In a garrison or field setting, demonstrate the knowledge to operate the MATCD communication assets and provide its capabilities to include:

(1) VHF/UHF/HF/FM radios and corresponding control positions.
(2) Communication equipment associated with the AN/TSQ-120, AN/TSQ-216 and AN/TSQ-131.
(3) Encryption capabilities and COMSEC procedures.

Performance Standards. The officer will establish a two-way communication link using at least two different types of radio equipment and perform a radio check in both secured and unsecured modes.

Prerequisite. Lecture A-18, A-19, and FAM-213.

Reference. MATCALS Controller Handbook and CMS-21A.

SYS-254 8.0 T,R L/S Z

Goal. Configure the Control and Communications (AN/TSQ-131) and associated equipment for basic operation.

Requirement. Properly utilize all equipment in the AN/TSQ-131.

Performance Standards. Execute the following functions:

(1) Operate the Operator Control Unit (OCU).
(2) Set up communications for a final approach.
(3) Program Multi-Mode Display (MMD) for elevation/azimuth.
(4) Load FOC software into MMD via Magnetic Tape Unit (MTU).
(5) Load FOC software into MMD via Serial Data Bus (SDB).
(6) Set up an MMD for surveillance usage (ADC).
(7) Set up an MMD for a Final Controller (FC) Trainee.
(8) Set up a Final Control (FC) simulation scenario.

(9) Establish and exit a TADIL-B circuit.
(10) Emergency circuit exit TADIL-B.
(11) Use of filters against TADIL-B.
(12) Build maps.

Prerequisite. Lectures A-18, A-19, and SYS-252.

Reference. MATCALS Controller Handbook.

SYS-255 5.0 T,R L/S Z

Goal. Identify standard data link symbology.

Requirement. During a data link exercise, identify and manipulate standard symbology over a TADIL-B link. The exercise should include friendlies, hostiles, unknowns, and pending. Ensure the display includes applicable information from the Airspace Control Order (ACO), i.e. CAP locations, MRRs, MEZ/FEZ.

Performance Standards. Visually identify data link symbology with a minimum of 70% accuracy.

Prerequisite. Lecture A-16 and FAM-219.

Reference. MATCALS Controller Handbook.

SYS-256 5.0 T,R L/S Z

Goal. Operate the AN/TSQ-120, Expeditionary Control Tower and associated equipment.

Requirement. Properly utilize all equipment in the AN/TSQ-120.

Performance Standards. Locate and operate the following equipment:

(1) Power distribution panel.
(2) Internal and external lights.
(3) Aldis lamp.
(4) Overhead speakers and adjustment knobs.
(5) Flare gun assembly and firing switch.
(6) Digital clock.
(7) Thermostat.
(8) Convert barometric pressure reading to altimeter setting.
(9) Wind direction and speed indicator operation.
(10) TELCO (intercom/land line).
(11) VHF and UHF tunable radios.
(12) Radio selector buttons.
(13) Speaker selector switch.
(14) ATIS.
(15) Microphone and headset/handset jacks.
(16) Crash alarm.
(17) Fire detector.
(18) Operators Control Unit (OCU).

Prerequisite. FAM-215.

Reference. Part II Expeditionary Control Tower Equipment Basic Course, Technical Manual EEE 119-MA-OMI-010/SA2257TSQ-120, and MCO 3501.9B.

SYS-257 6.0 T,R L/S Z

Goal. Observe MACCS agencies in an exercise.

Requirement. In garrison or a field exercise, observe MACCS agencies and become familiar with major operating positions, communication links, and integration requirements.

Performance Standards. Identify the following with a minimum of a 70% accuracy rate.

(1) Major operating positions of the:
    (a) TACC.
    (b) TAOC.
    (c) DASC.
    (d) LAAD.
    (e) MWCS.
    (f) VMU.
(2) Identify the types of communication available at the:
    (a) TACC.
    (b) TAOC.
    (c) DASC.
    (d) LAAD.
    (e) MWCS.
    (f) VMU.

Prerequisite. FAM-217.

Reference. FMFM 100-103-2 and MAWTS-1 MACCS Reference Guide.

External Syllabus Support. TACC, TAOC, VMU, LAAD Platoon, DASC, and MWCS Detachments.

SYS-258 5.0 T,R L/S Z

Goal. Operate the Remote Landing Site Tower (AN/TSQ-216) and associated equipment.

Requirement. Properly utilize all equipment in the AN/TSQ-216.

Performance Standards. Locate and operate the following equipment:

(1) Power distribution panel.
(2) Internal and external lights.
(3) Aldis lamp (IR and visible light).
(4) Flare gun.
(5) Digital clock.
(6) Thermostat.
(7) Convert barometric pressure reading to altimeter setting.
(8) Wind direction and speed indicator operation.

(9) TELCO (intercom/land line).
(10) VHF, UHF and HF tunable radios.
(11) Radio selector buttons.
(12) Speaker selector switch.
(13) ATIS.
(14) Microphone and headset/handset jacks.
(15) Crash alarm.
(16) Fire detector.
(17) Operators Control Unit (OCU).
(18) Antenna construction.
(19) Generator.

Prerequisite. KFAM-206.

Reference. RLST TM.

4. Simulation Training (1 Event, 10.0 Hours)

SIM-260 10.0 R S Z

Goal. Control precision/surveillance approaches using the simulation mode of the AN/TSQ-131.

Requirement. Utilize the AN/TSQ-131 equipment under the supervision of an OJTI.

Performance Standards. Control 20 simulated approaches using the following RFC modes of the MATCALS:

(1) Simulated Mode III final approach.
(2) Simulated Mode II final approach.
(3) Simulated Mode I final using track update menu.
(4) Simulated Mode II, ACLS, TADIL-C.
(5) Use all of the above to include simulated emergencies and unusual circumstances.

Prerequisite. SYS-254 and KFAM-206.

Reference. MATCALS System Operation Manual, MATCALS Controller Handbook, and MCO 3501.9B.

5. Operations Training (3 Events, 62.0 Hours)

OPS-270 30.0 T L Z

Goal. Perform the duties of a Radar Final Controller.

Requirement. In a radar environment, under direct supervision of an OJTI, perform the duties and responsibilities of a Radar Final Controller.

Performance Standards. Demonstrate the proficiency required to be recommended for qualification as a Radar Final controller.

Prerequisite. SYS-250, KFAM-200 through KFAM-204, and all KRFC knowledge events.

Reference

NAVAIR 00-80T-114
- Ch4 Naval Certification Procedures.
- Ch7 General (Radar Operations).
- Ch8 Training, Standardization, and Air Traffic Controller Performance Evaluations.
- Appendix G ATC Specialist Mishap Statement.
- Appendix I Minimum Altitude Vectoring Chart.
- Appendix J Certification, Rating, and Quality Assurance Program.

Local publications and MCO 3501.9B.

OPS-271 30.0 T L Z

Goal. Perform the duties of Tower Ground Controller.

Requirement. In a control tower, under direct supervision of an OJTI, perform the duties and responsibilities of a Tower Ground Controller.

Performance Standards. Demonstrate the proficiency required to be recommended for qualification as a Tower Ground controller.

Prerequisite. SYS-251, KFAM-200 thru KFAM-204, and all KTGC events.

Reference

NAVAIR 00-80T-114
- Ch4 Naval Certification Procedures.
- Ch6 General (Tower Operations).
- Ch8 Training, Standardization, and Air Traffic Controller Performance Evaluations.
- Appendix G ATC Specialist Mishap Statement.
- Appendix I Minimum Altitude Vectoring Chart.
- Appendix J Certification, Rating, and Quality Assurance Program.

Local publications and MCO 3501.9B.

OPS-272 2.0 T,R L/S Z

Goal. Operate communications equipment in secure mode and frequency agile mode (as applicable).

Requirement. In a garrison or field environment, communicate with other agencies using the secure mode of organic radios.

Performance Standards. Demonstrate the use of the following:

(1) AN/GRC-171 (V) (Tower).
(2) AN/GRC-171 (V) (TADIL-C).
(3) AN/GRC-211.
(4) AN/URC-94 (V).
(5) AN/VRC-82.
(6) AN/PRC-119 FM.
(7) AN/PRC-104 HF.

(8) AN/PRC-113 UHF/VHF (AM).
(9) AN/PRC-117F.
(10) AN/PRC-138.
(11) KG-84C.
(12) KY-58,99.
(13) KIR-1C.
(14) KY-75.
(15) KYK-13.
(16) KOI-18.
(17) ARC-210.
(18) CYZ-10.

Prerequisite. Lecture A-19, KFAM-209, and SYS-253.

Reference. MCI 25.25, MAWTS-1 ASP, and MCO 3501.9B.

6. Check Training (2 Events, 4 Hours)

CK-280 2.0 T,E L Z

Goal. Qualify as a Radar Final Controller.

Requirement. In a garrison or field environment, under direct supervision and in compliance with established NATOPS evaluation criteria, apply knowledge and procedures in a safe, orderly, and expeditious manner while on the Radar Final Control position.

Performance Standards. Pass an OJT exam demonstrating knowledge and proficiency as a Radar Final Controller:

(1) Provide instructions necessary for an aircraft to conduct an ASR/PAR/PALS approach.
(2) When required, monitor approaches as specified in FAA 7110.65.
(3) Other duties as assigned by the Radar Watch Supervisor.
(4) Other duties as outlined in local Facility Manual.

Prerequisite. OPS-270.

Reference. NAVAIR 00-80T-114, Facility Manual, and MCO 3501.9B.

CK-281 2.0 T,E L Z

Goal. Qualify as a Tower Ground Controller.

Requirement. In a garrison or field environment, under direct supervision and in compliance with established NATOPS evaluation criteria, apply knowledge and procedures in a safe, orderly, and expeditious manner while on the Tower Ground Control position.

Performance Standards. Pass an OJT exam demonstrating knowledge and proficiency to perform the following as a Tower Ground Controller:

(1) Formulate and issue ground movement clearances to aircraft and vehicles operating on the airport.

(2) Transmit current weather and field conditions, as required.
(3) Other duties as assigned by the Tower Watch Supervisor.
(4) Other duties as outlined in local Facility Manual.

Prerequisite. OPS-271.

Reference. NAVAIR 00-80T-114, Facility Manual, and MCO 3501.9B.

## 134. COMBAT QUALIFICATION TRAINING EVENTS

1. Purpose. To develop advanced proficiency in air traffic control tower and radar operations. Upon completion of this portion of the training syllabus, the individual is 95% trained in ATC tower and radar operations and is Combat Qualified. Syllabus requirements are designated as Familiarization (FAM), Simulation (SIM), Operations (OPS), and Qualification (QUAL).

a. Prerequisite. Successfully complete the 200-level of this syllabus.

b. Academic Training. In addition to MAWTS ASP lessons located in table 1-7, some events require the controller to be familiar with knowledge syllabus references located in Appendix A of this syllabus. All knowledge syllabus events must be covered in an oral or written exam. The minimum passing score is 80%.

c. Live and Simulator Event Training (33 Events, 235 Hours)

2. Familiarization Events (17 Events, 45.0 Hours)

FAM-300 2.0 T,R L Z

Goal. Describe the MATCD LOA/SOP/Time Share documents and FAP agreement.

Requirement. Identify the characteristics of existing MATCD LOAs/SOP/Time Share documents and FAP agreement.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. Local LOAs/SOP/time share documents for the MATCD.

FAM-301 4.0 T,R L/S Z

Goal. Introduce MATCD site selection.

Requirement. Participate in the planning and conduct of a site survey for the placement of a MATCD.

Performance Standards. Perform the following:

(1) Select a MATCD site considering:
(a) Mission.
(b) Tower site with best view of airport, Class D airspace, and patterns.
(c) PAR site that affords clear avenues.
(d) Reconnaissance of selected sites.

(d) ASR site that provides minimal terrain masking.
(e) Radar coverage of the area of ATC responsibility.
(f) Camouflage.
(g) Site security.
(h) Support equipment.

(2) Account for the following MATCD equipment characteristics:
(a) Sighting limits of the radar set.
(b) Optimum runway/sector coverage.
(c) Obstructions to radar view.
(d) Terrain characteristics.
(e) Typical sighting configurations.
(f) Power requirements.
(g) Installation requirements.
(h) Wind survival tie-down procedures.

Prerequisite. FAM-214.

Reference. MAWTS-1 ASP and MCO 3501.9B.

FAM-302 2.0 T,R L Z

Goal. Describe Forward Operating Bases (FOB's) and how the MATCD supports them.

Requirement. Properly man and equip the different FOB’s common to the Marine Corps.

Performance Standards. Identify each of the following and the MATCD that is employed in support of each:

(1) Main Air Base.
(2) Air Facility.
(3) Rapid Ground Refueling (RGR) procedures.
(4) Air Sites (Tactical Landing Zone (TLZ), Helicopter Landing Zones (HLZ).
(5) Air Points (Forward Arming and Refueling Point [FARP], Rapid Ground Refueling [RGR], Lager Point).

FAM-303 2.0 T,R L/S Z

Goal. Introduce flight inspection/certification procedures.

Requirement. Understand requirements for a flight inspection.

Performance Standards. Describe flight inspection/certification to include:

(1) Request to the appropriate agency.
(2) Standardization procedures and techniques for flight inspecting air navigation facilities.
(3) Certifying NAVAID/radar operational status.
(4) Certifying the instrument flight procedures that the NAVAID/radar supports.
(5) Flight check profiles associated with permissive and restrictive environments.

Reference. FAA Handbook OAP 8200.1 U.S. Standard Flight Inspection Manual.

FAM-304 2.0 T,R L Z

Goal. Introduce Terminal Instrument Procedures (TERPS).

Requirement. State the following:

(1) Purpose of TERPS.
(2) Two types of TERPS.
(3) Four segments in procedures construction.
(4) MATCD NAVAIDS.
(5) Two areas of each segment.
(6) Required obstacle clearance for each approach segment.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. FAAH OAP 8200.1 U.S. Standard Flight Inspection Manual, OPNAV 3722.16 U.S. Standard for Terminal Instrument Procedures, Terminal Instrument Procedures (TERPS) (#01230) ASP, MAWTS-1, and MCO 3501.9B.

FAM-305 3.0 T,R L/S Z

Goal. Describe an Airspace Control Plan (ACP), Air Tasking Order/Airspace Control Order (ATO/ACO), OPTASKLINK message and Special Instructions (SPINS).

Requirement. Extrapolate information from the ATO/SPINS, ACO, and OPTASKLINK.

Performance Standards. Utilize the information in an ATO/ACO, OPTASKLINK message and SPINS to:

(1) Schedule appropriate number of position qualified controllers.
(2) Schedule student controller training.
(3) Manipulate the ATO/ACO into a flight schedule for MATCD use.
(4) Reporting unit responsibilities.

Prerequisite. Lecture A-09.

Reference. ACP, ATO/ACO, SPINS, and MCO 3501.9B.

FAM-306 2.0 T,R L Z

Goal. Describe Electronic Warfare (EW).

Requirement. Utilize proper EW procedures.

Performance Standards. Recognize EW activity and demonstrate:

(1) Meaconing, Intrusion, Jamming, and Interference (MIJI) reporting as it applies to the following ATC equipment: (a) AN/TSQ-120.

(b) AN/TRN-44.
(c) AN/TPN-30.
(d) AN/TSQ-131.
(e) AN/TPS-73.
(f) AN/TPN-22.
(g) AN/TRC-195.

(2) Knowledge of the following EW categories:
(a) Electronic Protection (EP).
(b) Electronic Attack (EA) techniques.
(c) Electronic support (ES) techniques.

Reference. MACS Electronic Warfare (U) (#01205) MAWTS-1 ASP.

FAM-307 2.0 T,R L Z

Goal. Introduce Tactical Digital Information Link (TADIL) theory.

Requirement. Explain TADIL theory to include:

(1) Identify the characteristics of existing TADILs.
(2) Identify the meaning of Data Link Reference Point (DLRP), Unit System Coordination Center (USCC), Unit Position (UPOS) and the difference between the data grid and the display grid.
(3) Identify the capabilities of each service's command and control agencies to conduct one or more of the TADILs.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. MAWTS-1 ASP.

FAM-308 2.0 T,R L Z

Goal. Describe MACCS TADIL interoperability.

Requirement. Describe MACCS TADIL interoperability to include:

(1) Major interface considerations with the following:
(a) TADIL-A.
(b) TADIL-B.
(c) GBDL.
(d) TADIL-C.
(e) TADIL-J.
(2) Specific considerations for data link operation.
(3) Voice nets to be activated for joint service operations.
(4) Major considerations for selecting TADIL systems.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. MACCS Data Link Interoperability (#11214) MAWTS-1 ASP.

FAM-309 2.0 T,R L Z

Goal. Describe Operational Data (OPDAT) message preparation and use.

Requirement. Describe an OPDAT message to include:

(1) Locate the OPDAT message in JCS PUB 12, Vols. 1-4, and JTAO Procedural Handbook.
(2) Complete the OPDAT message using supplied parameters.
(3) Identify those parts of the OPDAT that relate to TADIL-B.
(4) Identify what information is contained within each part relating to TADIL-B and how it is applied to the JTAO interface.
(5) Identify those parts of the OPDAT that relate to interface duties, areas of responsibility, and zones of airspace responsibility.
(6) Identify the three ways OPDAT expresses locations, areas of responsibility, and zones of airspace management.
(7) Identify the OPDAT part dealing with encryption references.

Performance Standards. Pass an exam with a minimum score of 80%.

Prerequisite. MAWTS-1 ASP #11205.

Reference. JCS PUB 12, Vols. 1-4, JTAO Procedural Handbook, and OPDAT.

FAM-310 2.0 T,R L Z

Goal. Describe phasing control ashore.

Requirement. Describe in detail phasing control ashore to include:

(1) Phases in the process.
(2) MACCS agency actions that define each phase.
(3) Primary communication links between agencies.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. Phasing Control Ashore (#10318) MAWTS-1 ASP.

FAM-311 2.0 T,R L Z

Goal. Describe airspace and ATC considerations in regard to the Federal Aviation Administration (FAA).

Requirement. Interact with the civil aviation community.

Performance Standards. Describe or complete the following in regard to airspace and ATC considerations and the FAA:

(1) Status of ATC equipment systems.

(2) Operational tempo of civilian flights within local airspace.
(3) Liaison with FAA ATC representatives.
(4) Information flow between civilian and military ATC personnel.
(5) Control measures to deconflict military/civilian aircraft.

Reference. OPNAV 3770.2 Airspace Procedures Manual, FAA Handbook 7400.8 Special Use Airspace, ACP/ACO, Pilot Controller Handbook (PCH), NAVAIR 00-80T-114 ATC Facilities Manual, and NAVAIR 00-80T-115 Expeditionary Airfields.

FAM-312 2.0 T,R L Z

Goal. Introduce airspace and ATC considerations with regard to the International Civil Aviation Organization (ICAO).

Requirement. Describe or complete the following in regard to airspace and ATC considerations and the ICAO:

(1) Status of sovereign nation's air traffic control system.
(2) Operational tempo of civilian flights.
(3) Liaison with sovereign nation's ATC representatives.
(4) Information flow between civilian and military ATC personnel.
(5) Control measures to deconflict military/civilian aircraft.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. DOC-4444/501 ICAO Rules of the Air and ATC Service.

FAM-313 4.0 T,R L Z

Goal. Describe the Airspace Deconfliction System (ADS).

Requirement. Describe the purposes and the JAOC users of ADS, including its functions and capabilities.

Performance Standards. Pass an exam with a minimum score of 80%.

Prerequisite. FAM-220, and ACC TBMCS Operator/Technician Course (F19L2V2).

Reference. ADS Software User's Manual (SUM) TBMCS and Air Operations Center, ACCI 13, 1 Feb 95.

FAM-314 4.0 T,R L Z

Goal. Describe the Joint Air Operation Center (JAOC).

Requirement. Describe the JAOC to include:

(1) Primary mission and elements of the JAOC.

(2) Responsibilities of each JAOC Division/element to include:
(a) Combat Operations Division.
(b) Combat Plans Division.
(c) Strategy Division.
(d) Air Mobility Division.
(e) Liaison personnel within the JAOC.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. Joint Pub 1-02, DOD Dictionary of Military and Associated Terms, March 1994, Joint Pub 3.0 Operations, September 1993, Air Combat Command Instruction 13, February 1995, Joint Pub 3.56.1 Command and Control for Joint Air Operations, Nov 1994, Joint Pub 3.56.24 Joint Interface Operational Procedures, Oct 1992.

FAM-315 6.0 T,R L/S Z

Goal. Demonstrate embarkation of ATC equipment.

Requirement. Identify requirements and prepare the required data to aid in the construction of a load plan for amphibious shipping and fixed wing air transport platforms including C-5A, C-141B, C-17 and C-130.

Performance Standards. Specifically describe how many lifts of each aircraft listed above it would take to move each of the following systems with associated support equipment:

(1) AN/TSQ-120 Expeditionary Control Tower.
(2) AN/TRC-195 Mobile Control Tower.
(3) AN/TSQ-216 Remote Landing Site Tower.
(4) AN/TSQ-131 Control and Communication Subsystem.
(5) AN/TRN-44 TACAN.
(6) AN/TPN-30A Marine Remote Area Approach Landing System.
(7) AN/TPN-22 All-Weather Landing Subsystem.
(8) TSM-170 Maintenance Van.
(9) AN/TSQ-73 Surveillance Radar.
(10) Equipment requiring movement with a 30 ton crane.
(11) Equipment requiring movement with a 7.5 ton crane.
(12) Equipment requiring movement with a 10,000 lb forklift.
(13) Equipment requiring movement with a 6,000 lb forklift.
(14) Ground transportation requirements to the POE/site.
(15) Equipment requiring movement with a RATCH.
(16) Pallet construction and packing.

Reference. MAWTS-1 ASP, MCI 04.7, and MCI 04.11.

FAM-316 2.0 T,R L Z

Goal. Demonstrate knowledge of the VMU system and capabilities of the VMU squadron.

Requirement. Understand capabilities of the VMU squadron.

Performance Standards. Demonstrate knowledge of the VMU to include:

(1) Asset location.
(2) Remote receiving station (RRS).
(3) Ground control station (GCS) including remote capabilities.
(4) Launch and recovery site location.
(5) Capabilities and limitations to include:
    (a) Missions.
    (b) Endurance.
    (c) Radius of action.
    (d) Sensors.
    (e) Acoustic signature.
    (f) Weather.
    (g) Personnel requirements.
(6) Vulnerabilities to include SAM, AAA, and electronic warfare.
(7) Airspace management considerations.

External Syllabus Support. VMU squadron officer.

3. Systems Training (2 Events, 22.0 Hours)

SYS-320 16.0 T,R L/S Z

Goal. Configure the AN/TSQ-131, Control and Communications Subsystem (CCS) for operations.

Requirement. Properly utilize all equipment in the AN/TSQ-131.

Performance Standards. With the aid of references, complete the actions required to operate the four modes available to the MATCALS operator:

(1) Arrival/Departure Controller (ADC).
(2) Final Controller (FC).
(3) Maintenance (MT).
(4) Training (TR) in the AN/TSQ-131, CCS to include:
    (a) Console modes available (basic, operational, and utility).
    (b) System parameters (functional limits, compile-time parameters).
    (c) Concurrent and redundant software modules.
    (d) Control and Communications Subsystem (CCS) operational program interface.
    (e) Software architecture.
    (f) System turn-on procedures.
    (g) System initialization.
    (h) Local/remote Magnetic Tape Unit (MTU) loading.
    (i) Entering system initialization.
    (j) System readiness check-off.
    (k) System performance monitoring.
    (l) Operator Control Unit (OCU) procedures/capabilities.
    (m) Data entry tools (Fixed Action Buttons [FAB], Variable Action Buttons [VAB], keyboard, graphic tablet).

(n) Console mode menu trees.
(o) Equipment list.

Prerequisite. MATCALS Advanced Operator Course (N2473H1), FAM-303, SYS-254, and SIM-260.

Reference. MATCALS Controller Handbook.

SYS-321 6.0 T,R L/S Z

Goal. Develop an ACO utilizing TBMCS AD Module.

Requirement. Perform as Airspace Deconfliction in a TACC or Joint Air Operations Center (JAOC).

Performance Standards. With the aid of references develop and generate the ACO utilizing AD to include:

(1) Set up AD for entering airspace user requirements and retrieving information.
(2) Enter airspace user requirements into AD and identify conflicts.
(3) Resolve conflicts using AD.
(4) Generate an ACO.

Prerequisite. FAM-305, FAM-313, and Secret Level-GENSER Clearance.

Reference. ADS Software User's Manual (SUM) TBMCS and Air Operations Center, ACCI 13, 1 Feb 95.

4. Simulation Training (3 Events, 48.0 Hours)

SIM-330 20.0 T,R L/S Z

Goal. Develop plans for ATC services in support of a FOB.

Requirement. Given a tactical scenario, identify the level of security, types of aircraft, lift assets, location, and support agencies associated with:

(1) Main Base.
(2) Air Facility.
(3) Air Site.
(4) Air Point.
    (a) FARP.
    (b) Lager Point.

Performance Standards. Develop an LOI for a MATCD that identifies requirements of each for the four types of FOBs.

Prerequisite. FAM-301 and FAM-302.

Reference. MAWTS-1 ASP.

SIM-331 20.0 T,R L/S Z

Goal. Demonstrate communications planning.

Requirement. Demonstrate knowledge of a communications plan, ACEOI, Annex K of an operations order/plan.

Performance Standards. Perform the following:

(1) Participate in the communication planning for a MACCS training evolution.
(2) Use the Annex K and ACEOI to develop the MATCD Communications Plan for a MACCS Exercise.

Prerequisite. FAM-216 and FAM-217.

Reference. MAWTS-1 ASP.

External Syllabus Support. MACCS training exercise.

SIM-332 8.0 T,R S Z

Goal. Conduct ATC operations in an NBC environment.

Requirement. In a simulated MOPP Level IV NBC environment, perform ATC functions while operating MATCD equipment.

Performance Standards. While in MOPP IV, provide for the safe, orderly, and expeditious movement of air traffic, in either radar or tower environment.

Reference. MCI 57.6 and MCO 3501.9B.

External Syllabus Support. Voice amplifier.

5. Operations Training (8 Events, 72 Hours)

OPS-340 2.0 T,R S/L

Goal. Conduct an ATC tactical crew brief.

Requirement. In a simulation/exercise, conduct a tactical crew brief.

Performance Standards. Brief must include:

(1) Enemy and friendly situation.
(2) Base Defense Zone (BDZ) status.
(3) Air defense warning condition.
(4) Status of alert.
(5) Weapons release condition.
(6) Continuing missions.
(7) Scheduled events.
(8) Published ATO.
(9) Assigned frequencies/callsigns.
(10) Weather.
(11) Equipment status.

(12) Crew requirements.
(13) Casualty procedures.
(14) Emergency procedures.

Prerequisite. FAM-211.

Reference. MAWTS-1 ASP.

OPS-341 10.0 T,R L/S Z

Goal. Prepare, request, and supervise a flight inspection/certification for a MCAS or MATCD.

Requirement. Supervise a flight inspection/certification of a MCAS or MATCD ATC equipment.

Performance Standards. Perform or describe the following:

(1) Request a flight inspection from the appropriate agency.
(2) Certify NAVAID/radar operational status.
(3) Certify instrument flight procedures the NAVAID/radar supports.
(4) Conduct pre/post flight check briefs with designated flight
(5) Check crew.
(6) Tactical flight check profiles associated with permissive, and restrictive environments.
(7) Approving authority.

Prerequisite. FAM-303.

Reference. FAA Handbook OAP 8200.1 U.S. Standard Flight Inspection Manual (TERPS Manual), OPNAVINST 3722.16, NAVAIR 00-80T-114, and NAVAIR 00-80T-115.

External Syllabus Support. FAA Flight Check aircraft.

OPS-342 N/A T,R L Z

Goal. Train as an Air Traffic Control Facility Watch Officer (ATCFWO)/MATCD WC.

Requirement. During an operation or a field exercise, and under the direct supervision of a qualified FWO/WC, perform the duties and responsibilities of a FWO/WC.

Performance Standards. Demonstrate proficiency in the following:

(1) Crew management.
(2) Maintain current status of BDZ if in a tactical environment.
(3) MACCS information flow.
(4) Interface with external MACCS agencies.
(5) Control judgment.
(6) Traffic management.
(7) Operating procedures and methods.

(8) Coordination and communication.
(9) NOTAMS.
(10) Flight schedules/ATO.
(11) Airfield status.
(12) Equipment.

Prerequisite. CK-280 and CK-281.

Reference. FAA 7110.65, FAA 7110.10, NAVAIR 00-80T-114, NAVAIR 00-80T-115, and local publications.

OPS-343 4.0 T,R S/L Z

Goal. Identify and execute Electronic Protection (EP) procedures for the MATCALS.

Requirement. In a garrison or field setting in a simulated electronic warfare environment, employ EP procedures.

Performance Standards. Describe the following:

(1) ECCM features of MATCALS radars.
(2) EP brevity codes per Air, Land, and Sea Application Center (ALSA) Publication.
(3) Launch/recover aircraft, effect all-weather recoveries, and radar/non-radar handovers between ATC and adjacent agencies.

Prerequisite. FAM-306.

Reference. MAWTS-1 ASP, ALSA Center Publication and MCRP 3-25B.

External Syllabus Support. EA-6B.

OPS-344 8.0 T,R L Z

Goal. Perform as an MMT Leader.

Requirement. During an operation or training exercise, while utilizing required equipment, and under the supervision of a qualified MMT Leader Instructor, perform as an MMT Leader.

Performance Standards

(1) Recommend/assist in TLZ/HLZ site selection and survey.
(2) Coordinate with civil and military control agencies.
(3) Prepare personnel and equipment readiness.
(4) Conduct MMT and aircrew briefings.
(5) Insertion and extraction methods.
(6) Mark TLZ/HLZs.

Prerequisite. FAM-301 and FAM-302.

Reference. MCI 25.30, MCI 25.32, AMCR 55-60, MCO 3501.9B, and MMT SOP.

OPS-345 N/A T,R L Z

Goal. Perform as an MMT Leader for a MACG MEU(SOC) Detachment.

Requirement. Perform as the MMT Leader for a MACG MEU(SOC) Detachment.

Performance Standards. Perform the following duties:

(1) Planning.
(2) Personnel management.
(3) Aircrew briefings.
(4) MMT operations.
(5) Insertions and Extraction.
(6) ATC liaison.

Reference. MAWTS-1 ASP.

External Syllabus Support. MACG MEU Detachment and MEU aviation operations.

OPS-346 24.0 T,R L

Goal. Plan and employ a Base Defense Zone (BDZ).

Requirement. In a field environment, plan and employ a BDZ.

Performance Standards. Execute a BDZ to include:

(1) LAAD capabilities, limitations, and requirements.
(2) Air defense priorities.
(3) Air defense control measures.
(4) ID criteria and responsibility.
(5) Rules of engagement.
(6) Integration within the MACCS.
(7) Communications planning.
(8) GBDL architecture.

OPS-347 24.0 T,R L/S Z

Goal. Conduct MATCALS Tactical Digital Information Link (TADIL) B/C.

Requirement. With the aid of references, conduct TADIL-B and -C operations to include:

(1) TADIL-B initialization and monitoring.
(2) Air track processing.
(3) Special points and pointers.
(4) Orders and command type messages.
(5) Establishing and exiting TADIL-B circuits.
(6) Emergency circuit exit TADIL-B.
(7) Use of Filters with TADIL-B.
(8) Mode II, ACLS, and TADIL-C.
(9) Identify and manipulate standard symbology over a TADIL-B link.

Performance Standards

(1) Establish a TADIL-B link with at least one other MACCS agency.
(2) Establish TADIL-C link with aircraft for Mode II approach.

Prerequisite. MATCALS Advanced Operator (N2473H1), FAM-307, and FAM-308.

Reference. MATCALS Controller Handbook.

External Syllabus Support. Operational TACC and/or TAOC.

6. Qualification Training (3 Events, 48.0 Hours)

QUAL-390 8.0 E L Z

Goal. Qualify as an MMT Leader in a field exercise.

Requirement. During an operation/field exercise, with a qualified MMT Leader Instructor, qualify as an MMT Leader.

Performance Standards. Demonstrate proficiency in the following:

(1) Site selection.
(2) Personnel and equipment readiness.
(3) MMT and aircrew briefings.
(4) Insertion and extraction.
(5) Mark TLZ/HLZs.

Prerequisite. OPS-344, KFAM-212, and FAM-302.

Reference. MCI 25.30, MCI 25.32, AFI 13-217, and MCO 3501.9B.

DESG-391 N/A L Z

Goal. Perform as an Air Traffic Control Facility Watch Officer (ATCFWO) /MATCD WC.

Requirement. During an operation or a field exercise, perform the duties and responsibilities of a FWO/WC.

Performance Standards. Demonstrate proficiency in the following:

(1) Crew management.
(2) Maintain current status of BDZ if in a tactical environment.
(3) MACCS information flow.
(4) Interface with external MACCS agencies.
(5) Control judgment.
(6) Traffic management.
(7) Operating procedures and methods.
(8) Coordination and communication.
(9) NOTAMS.
(10) Flight schedules/ATO.
(11) Airfield status.

(12) Equipment.

Prerequisite. CK-280 and CK-281; other prerequisites for an FWO/WC will be determined by the ATCFO or MATCD Commander.

Reference. FAA 7110.65, FAA 7110.10, NAVAIR 00-80T-114, NAVAIR 00-80T-115, and local publications.

DESG-392 40.0 T,R L Z

Goal. Perform as the ATCFO.

Requirement. Manage an Air Traffic Control Facility (ATCF) at a MCAS.

Performance Standards. Perform the following:

(1) Manage an ATCF.
(2) Provide proper management and coordination of aircraft operations within ATC jurisdiction of the facility.
(3) Establish standard operating procedures as related to personnel equipment, training, and qualifications.
(4) Act as liaison with the FAA and military units on airspace matters.

Prerequisite. CK-280 and CK-281.

Reference. NAVAIR 00-80T-114.

## 135. FULL COMBAT QUALIFICATION TRAINING

1. Purpose. To provide training such as Special Purpose MAGTF/MEF level MACS employment, advanced MACS ATC Detachment tactics, and comprehensive training in MACCS, MAGTF, and Joint Goal Force (JTF)/Joint Forces Air Component Commander (JFACC) operations. Upon completion the individual is 100% trained and is fully combat qualified. Note: concurrent with this stage of training, qualified individuals are expected to receive training as a detachment commander to fully integrate the MATC Detachment as an agency of the MACCS. Syllabus requirements are coded as Familiarization (FAM), Simulation (SIM), or Operations (OPS).

a. Prerequisite. Successfully complete the 300-level of this syllabus.

b. Academic Training. A combination of the MAWTS ASP and JTAO Computer Based Training Modules are used to complete the events in this series.

c. Live and Simulator Event Training (25 Events, 554 Hours)

2. Familiarization Training (11 Events, 30.0 Hours)

FAM-400 2.0 T,R L Z

Goal. Introduce C2 of USMC TACAIR in joint operations.

Requirement. Understand command and control of Marine aviation in a joint environment.

Performance Standards. Explain C2 of USMC TACAIR in joint operations to include:

(1) Terminology utilized during joint operations.
(2) Chain of command in joint operations.
(3) Joint land operations command relationships.
(4) Coordination measures and areas for fire support.
(5) Definition and explanation of the Omnibus agreement in relation to USMC TACAIR.

Reference. MAWTS-1 ASP.

FAM-401 2.0 T,R L Z

Goal. Demonstrate knowledge of command and control warfare C2W.

Requirement. Explain the five pillars of C2W.

Performance Standards. Pass an exam with a minimum score of 80%.

Reference. MAWTS-1 ASP, JCS MOP 185 C3CM, FMFM 3-1, OPNAVINST 5510.1, and MCO 5600.20.

FAM-402 2.0 T,R L Z

Goal. Demonstrate knowledge of civil and combat airspace management.

Requirement. Manage airspace issues in a civil or combat environment.

Performance Standards. Describe the following:

(1) Principal airspace control facilities and the types of control they employ.
(2) Characteristics of control points.
(3) The four airspace management principles.
(4) Factors used to determine mix of positive and procedural control.
(5) MACCS intelligence collection and dissemination procedures and capabilities.
(6) Knowledge of command and control information flow.

Reference. MCWP 3-25.1, ICAC Manual, and Airspace Management Course.

FAM-403 2.0 T,R L Z

Goal. Demonstrate knowledge of Anti-Radiation Missiles (ARM) Countermeasures for MACCS units.

Requirement. Properly utilize ARM countermeasures within the MACCS.

Performance Standards. Describe ARM Countermeasures for MACCS to include:

(1) Ground rules for determining the effectiveness of ARM countermeasures.
(2) Elements considered when preparing EMCON plan.
(3) Measures to reduce the effectiveness of an ARM threat.

Reference. ARM Countermeasures for MACCS Units (U) (#10364) MAWTS-1 ASP.

FAM-404 4.0 T,R L Z

Goal. Demonstrate knowledge of JTAO interface.

Requirement. Thoroughly understand JTAO interface, and key service Air Command, Control, Communications, and Intelligence C3I systems

Performance Standards. Perform the following:

(1) Select the correct definition for JTAO Interface.
(2) Recognize the correct definitions for defensive counter air operations.
(3) Identify JTAO related terms with their definitions.
(4) Select the TADIL which represents the normal connectivity between two air C3I units.
(5) Select the correct description for a given TADIL.
(6) Identify the correct description of a key air C3I unit.
(7) Identify which TADILs use point-to-point and which use netted communications.
(8) Identify the three categories of tactical air information shared on a JTAO Interface.
(9) Recognize the correct definitions for centralized and decentralized air defense operations.
(10) Identify the three features that best describe each TADIL.

Reference. Module 1, Introduction to the JTAO Interface (U), JTAO CBT Modules.

FAM-405 4.0 T,R L Z

Goal. Demonstrate knowledge of TADIL operations.

Requirement. Thoroughly understand TADIL operations and how they link together to form the JTAO Interface.

Performance Standards. Perform the following:

(1) Recognize what combat information is exchanged and/or forwarded on the JTAO Interface in supporting the C2 functions of the service tactical data systems.
(2) Identify the characteristics and normal communication methods for a given TADIL.
(3) Recognize the different message types supported by JTIDS and what TDMA provides.
(4) Recognize the relationship between NCS, roll call, PU, and NCT.

(5) Identify the different data timing rates for TADIL-A, -B, -C, and ATDL-1.
(6) Recognize the advantages of JTIDS when compared to TADIL-A, -B, -C, and ATDL-1.
(7) Identify the four categories of equipment which comprise a representative tactical data system equipment configuration for TADIL-A, -B, -C, and ATDL-1.
(8) Recognize the six modes of operation for a Data Terminal Set.
(9) Identify the four main sections of the JTIDS Class 2 terminal.
(10) Recognize the different Key Generators (KG) employed in tactical data system equipment configurations for TADIL-A, -B, ATDL-1, and JTIDS.
(11) Recognize how shared situational awareness is provided through the process of forwarding.
(12) Recognize the interfacing units on TADIL-A, -B, and -J.
(13) Identify the term Supporting Unit (SU), and know which TADIL subscribers would normally operate as an SU.
(14) Recognize the functions provided by an FPU, FRU, and FJU.
(15) Recognize the different forwarding rules for the JTAO Interface.
(16) Identify the key publications that describe the process of forwarding data via TADIL-A, -B, and -J in the JTAO interface.

Prerequisite. Module 1, Introduction to the JTAO Interface (U), JTAO CBT Modules.

Reference. Module 2, Introduction to TADIL Operations (U), JTAO CBT Modules.

FAM-406 2.0 T,R L Z

Goal. Demonstrate knowledge of Theatre Air Control System (TACS).

Requirement. Demonstrate knowledge of the U.S. Air Force operational facilities and units that comprise the TACS.

Performance Standards. Address the organization, roles, capabilities, and limitations of these facilities and how they participate in and contribute to the JTAO Interface to include:

(1) Identify mission, organization, and capability of the Air Force (AF).
(2) Identify functions of the AF C4I system.
(3) Identify the organization of the AF C4I system as part of a Joint Force in JTAO.
(4) Describe Ground Elements of the TACS.
(5) Define the missions and functions of the TACS.
(6) Describe command, control, and communications equipment associated with TACS.
(7) Identify TACS communications connectivity required for JTAO interface.

(8) Describe radar equipment and assets of the TACS.
(9) Define the mission and functions of the Air Operations Center (AOC).
(10) Describe the peacetime and wartime organization of the AOC.
(11) Define the capabilities of the AOC.

Prerequisite. FAM-405.

Reference. Module 6, Ground Elements of the Theater Air Control System (TACS) (U), JTAO CBT Modules.

FAM-407 2.0 T,R L Z

Goal. Demonstrate knowledge of Airborne Elements of the Air Control System (AEACS).

Requirement. Demonstrate knowledge of the Air Force operational systems and units that comprise the AEACS.

Performance Standards. Address the organization, roles, capabilities, and limitations of these facilities and how they participate in and contribute to the JTAO Interface to include:

(1) Describe the missions, organization, and capabilities of the AF.
(2) Identify functions of the AF C4I system.
(3) Identify the organization of the AF C4I system as part of a Joint Force in JTAO.
(4) Identify the aircraft associated with AEACS.
(5) Describe the missions and functions of the AEACS.
(6) Describe crew composition for AEACS aircraft along with operator duty positions.
(7) Identify radar equipment used by AEACS aircraft.
(8) Describe communications equipment used by AEACS.
(9) Describe the communications interface accomplished during JTAO.

Prerequisite. FAM-405.

Reference. Module 7, Airborne Elements of the Air Control System (AEACS) (U), JTAO CBT Modules.

FAM-408 4.0 T,R L Z

Goal. Demonstrate knowledge of the Army Air Defense Command and Control System (AADCCS).

Requirement. Demonstrate knowledge of the U.S. Army operational facilities, systems, and units which comprise the AADCCS.

Performance Standards. Address the organization, roles, capabilities, and limitations of these facilities and how they participate in and contribute to the JTAO Interface to include:

(1) Describe AADCCS's contribution to JTAO.
(2) Define the operational capabilities of AADCCS.

(3) Describe the organization of ADA units.
(4) Identify the ADA equipment and data links that support the JTAO Interface.
(5) Identify key personnel in Joint Air Defense Operations.
(6) Describe the difference between command and control for ADA units.
(7) Define the chain of command for ADA units.
(8) Identify key elements within the ADA organization in Joint Air Defense operation.
(9) Identify the function of ADAFCO at the CRC or TAOC.
(10) Describe Corps air defense assets.
(11) Identify the theater air defense assets assigned to AADC for operational control.
(12) Define PATRIOT operations with reference to the mission, capabilities, and limitations.
(13) Define FAAD operations.
(14) Roles and functions of the Battlefield Coordination Detachment (BCD).
(15) Describe TADILs to various ADA systems/units.
(16) Describe key command, fire control, and communications support at the brigade level.
(17) Identify AADCCS's role in Theater Missile Defense (TMD) support.

Prerequisite. FAM-405.

Reference. Module 8, Army Air Defense Command and Control System (AADCCS)(U), and JTAO CBT Modules.

FAM-409 2.0 T,R L Z

Goal. Demonstrate knowledge of Special Information Systems Aircraft (SIS A/C).

Requirement. Demonstrate knowledge of SIS A/C.

Performance Standards. Describe the mission and capabilities of:

(1) Airborne Battlefield Command and Control Center (ABCCC).
(2) E-3C Airborne Warning Control System (AWACS).
(3) E-2 Hawkeye.
(4) Rivet Joint (RJ).
(5) JSTAR Joint Surveillance Target attack Radar System.
(6) DASC(A).
(7) Side-looking Airborne Radar (SLAR).
(8) Unmanned Aerial Vehicles (UAV).
(9) Commando Solo.

FAM-410 4.0 T,R L Z

Goal. Demonstrate knowledge of the Advanced Planning System (APS).

Requirement. Describe the following as it relates to the APS:

(1) Significance of importing planning data.

(2) Purpose of Setup Planning Data in APS.
(3) Requirements for building external requests.
(4) Means of gaining situational awareness.

Performance Standards. Pass an exam with a minimum score of 80%.

Prerequisite. SIM-350 and SYS-321.

Reference. Operator Familiarization Course Training Materials for APS.

3. Simulation Training (4 Events, 50.0 Hours)

SIM-430 4.0 T,R L/S Z

Goal. Demonstrate knowledge and proficiency in Integrated Combat Airspace Command and Control.

Requirement. Understand the Integrated Combat Airspace Command and Control System.

Performance Standards. Demonstrate knowledge and proficiency to include:

(1) Mission of the Joint Force Commander.
(2) Airspace control authority (ACA) to include:
    (a) Assignment.
    (b) Responsibilities.
    (c) Integration with sovereign nation's ATC.
(3) Development of the airspace control plan.
(4) Area Air Defense Commander (AADC) to include relationship with the ACA.
(5) Joint Force Air Component Commander (JFACC).
(6) Component commands.
(7) Operation Concept for Integrating Combat Airspace Command and Control to include top-down guidance and direction, modular system, and the delegation of authority to service/functional components.
(8) Function of the Joint Airspace Control Center/Joint Air Defense Center (JACC/JADC).
(9) Airspace control boundaries to include, airspace control area, airspace control sector.
(10) Airspace control plan and airspace control order.
(11) Aerial air defense plan and tactical operational data.
(12) Air Force Theater Air Control System to include the function of:
    (a) Air Operations Center (AOC).
    (b) Control and Reporting Center (CRC).
    (c) Forward Reporting Post.
    (d) Modular Control Equipment.
    (e) Air Support Operation Center (ASOC).
    (f) Tactical Air Control Party.
    (g) Airborne elements of the ABCCC/AWACS/JSTAR.
(13) Army Airspace Command and Control System to include the function of the Army Air Ground System and Battlefield Coordination Element.

(14) Naval airspace command and control systems to include composite warfare commander concept, delegation of authority, CWC coordinating staff, and integration with air defense.
(15) Agencies with which the MACCS will interface.
(16) TADIL interface capabilities between all platforms and agencies between the participating services.

Prerequisite. FAM-209.

Reference. Joint Pub 3-56.1 Tactical Command and Control Planning Guidance Procedures for Joint Operations.

SIM-431 32.0 T,R L/S Z

Goal. Demonstrate knowledge and proficiency in an MATCD planning problem.

Requirement. Successfully deploy an ATC detachment, to include all ATC and maintenance assets.

Performance Standards. Demonstrate knowledge and proficiency to include:

(1) Initial planning conference.
(2) Simulate procedures to schedule a flight check.
(3) Site selection.
(4) Determine defensive posture.
(5) Schedule follow-on planning conferences.
(6) Publish an LOI.
(7) Develop Marine Simulation Event List (MSEL), if applicable.
(8) Develop a communication plan to include:
    (a) Frequency request for radars, NAVAIDS, and radios.
    (b) Telephone line request.
(9) Maintenance/supply support.
(10) Plan logistical support to include:
    (a) Advanced/main body arrival dates.
    (b) Advanced/main body retrograde dates.
    (c) Medical support.
    (d) Messing facilities.
    (e) Quarters.
    (f) Administrative support.
(11) After action reports (MCLLS) and debrief items.
(12) Tactical Aircraft Mission Planning System (TAMPS).
(13) TBMCS.
(14) Successfully plan the employment of a MATCD in a MACCS training evolution, including all the above listed requirements. The actual employment may be either real or notional.

Prerequisite. FAM-214, FAM-216, FAM-217, SYS-257, FAM-301, and FAM-315.

Reference. MATCD SOP and MCWP 3-25.8.

External Syllabus Support. MACCS training/operational event.

SIM-432 4.0 T,R L/S Z

Goal. Demonstrate knowledge and proficiency in the planning, execution and debrief of a simulated exercise.

Requirement. Demonstrate knowledge and proficiency in the planning, execution and debrief of MACCS Integrated Systems Training Exercise (MISTEX), Joint Services Tactical Exercise (JSTE), or Naval Expeditionary Force Exercise (NEFEX).

Performance Standards. Perform a MACCS Integrated Systems Training Exercise (MISTEX), Joint Services Tactical Exercise (JSTE), or Naval Expeditionary Force Exercise (NEFEX) utilizing the following:

(1) TBMCS.
(2) Utilize the CAFMS and APS systems in TBMCS.
(3) TAMPS.

Prerequisite. FAM-220, FAM-313, FAM-415, and SYS-257.

SIM-433 10.0 T,R S Z

Goal. Demonstrate knowledge and proficiency to execute the fundamental principles of rear area security planning.

Requirement. Design and implement a rear area security plan for the MATCD.

Performance Standards. With the aid of references, successfully apply the concepts and terminology common to the conduct of rear area security operations to include:

(1) Know the fundamentals and interrelationships between:
    (a) Combat Service Support Operations Center (CSSOC).
    (b) Rear Area Operations Center (RAOC).
    (c) Tactical Security Officer (TSO).
    (d) Assistant TSO (ATSO).
    (e) Patrol Leader (PL).
    (f) Roving Patrol/Reaction Team.
    (g) Sentry Posts (SPs).
    (h) Observation Posts (OPs).
    (i) Listening Posts (LPs).
(2) Plan for and be prepared to execute passive and active security measures for a MATCD based on current threat assessments given minimum reliance on the GCE and RAS effort is proportionate to the threat:
    (a) Identify passive measures.
    (b) Dispersion and camouflage.
    (c) Hardening of sites and installations.
    (d) Establishment of defensive plans and positions to include appropriate local barriers and obstacles and fire plans.
(3) Positioning of rear area organizations for mutual support.
    (a) Identify active measures.

(b) Patrol and establish OPs, LPs, security check points, and other local security measures.
(c) Convoy security.
(d) Position any available air and anti-mechanical defenses within the rear area.
(e) Provide defensive fire plans to the RASC.
(f) Establish and coordinate security and security reaction forces within rear area units and geographical rear area zones.
(g) Establish defensive plans and positions to include appropriate local barriers and obstacles and fire plans.
(h) Train all Marines in basic infantry skills to include anti-armor and air defense.

(4) Account for general contingencies:
(a) Enemy snipers.
(b) Enemy snipers may fire from one point, but be prepared for multiple firing points.
(c) The Patrol Leader of the Roving Patrol/Reaction Team should first determine likely firing points.
(d) During the contact period explain the immediate actions to be taken.
(e) React quickly, identify likely firing position and return fire.
(f) Give a report to the TSO or ATSO.
(g) Set-up flanking points.
(h) Maintain visual contact with sniper but do not approach area previously held by the sniper (booby traps).
(i) Cover possible withdrawal areas.
(j) During the immediate follow-up period, explain immediate actions to be taken.
(k) Isolate and cordon off the area where possible.
(l) Find a position to brief on-coming leader.

(5) Develop procedures for Mob Control:
(a) The presence of a crowd may be planned or may develop into a spontaneous emotional eruption.
(b) If planned, its purpose is to degrade security.
(c) Mob action is characterized by emotion and violent action and can be highly contagious.
(d) Quickly restore order with minimum use of force while ensuring a safe escape route for the mob.

Reference. Joint Pub 1, Joint Warfare of the US Armed Forces and FMFM 6-5, Marine Rifle Squad.

4. Operations Training (10 Events, 474 Hours)

OPS-440 40.0 T,R L Z

Goal. Develop an instrument approach.

Requirement. Research, develop, and submit for approval an instrument approach procedure.

Performance Standards. With the aid of references, develop a minimum of two instrument approaches (precision/non-precision)

for each NAVAID/radar system assigned to a MCAS or MATCD using Terminal Instrument Procedures (TERPS) and process it for DOD approval and publication.

Prerequisite. MATCALS Advanced Operator Course (N2473H1), FAM-303, and FAM-341.

Reference. FAA Handbook OAP 8200.1, U.S. Standard Flight Inspection Manual and TERPS Manual.

OPS-441 20.0 T,R S/L Z

Goal. Develop Emission Control (EMCON) and Radar Emissions Control (RADCON) plans for an MATCD.

Requirement. Develop and implement an EMCON and RADCON plan for the MATCD.

Performance Standards. Demonstrate knowledge and proficiency to:

(1) Develop EMCON and RADCON plans for each NAVAID/radar system listed:
    (a) AN/TRN-44, TACAN.
    (b) AN/TPN-30, Marine Remote Area Approach Landing System.
    (c) AN/TSQ 131(V), Control and Communication Subsystem.
    (d) AN/TPN-22, All-Weather Landing Subsystem.
    (e) AN/TPS-73, Surveillance radar.
(2) Demonstrate the MATCD ability to reduce its vulnerability as part of an integrated air defense system to an ECM/SAM threat while employing the above listed equipment.
(3) Demonstrate knowledge of EMCON/RADCON on ATC operations.
(4) Develop EMCON procedures for MATCD support of a MACCS training evolution.

Prerequisite. FAM-218, FAM-306, and OPS-343.

Reference. MACS EW (U) (#01205) MAWTS-1 ASP.

External Syllabus Support. EA-6B.

OPS-442 96.0 T,R L/S Z

Goal. Perform as an ATC Liaison Officer.

Requirement. Provide liaison with other military/civil ATC agencies and other MACCS and aviation units.

Performance Standards. Perform ATC liaison duties during a MACCS exercise/ SIMEX, or as appropriate, demonstrate knowledge of ATC responsibilities and duties to other MACCS or civilian ATC agencies.

Prerequisite. CK-280, CK-281, OPS-344, and OPS-345.

External Syllabus Support. Operational MACCS agencies or appropriate civilian ATC agency.

OPS-443 172.0 T,R L/S Z

Goal. Perform as a member of the ACE planning staff.

Requirement. In a tactical exercise, assist in the planning and airspace management for a MEU, MEB, MEF, or Special Purpose MAGTF.

Performance Standards. Assist in planning airspace management during an exercise/operation.

Prerequisite. OPS-344, OPS-345, and QUAL-390.

OPS-444 10.0 T,R L/S Z

Goal. Execute the fundamental principles of theater missile and air defense planning.

Requirement. With the aid of references, apply the concepts and terminology common to the integration of joint assets into a theater missile and air defense system. Identify who is responsible for conducting theater missile and air defense, specific responsibilities, missile and air defense agencies of joint forces and considerations for employment to include:

(1) Know who is normally appointed the Area Air Defense Commander (AADC).
    (a) Identify criteria used to normally appoint the AADC.
    (b) Identify which components will normally be designated the theater AADC.
    (c) Know the basic responsibilities of the AADC.
    (d) Identify the AADC basic responsibilities.
(2) Know the Theater Missile and Air Ground defense agencies and their functions:
    (a) Given a Theater Air Ground System air defense agency, select its air defense function.
    (b) Identify the objectives of Theater Missile Defense (TMD).
    (c) Identify the four operational elements of TMD.

Performance Standards. Pass a written exam with a minimum score of 80%.

Prerequisite. ACC Joint Air Operations Staff Course (F19L2W2).

External Syllabus Support. MACCS MISTEX or operational joint environment.

OPS-445 10.0 T,R L Z

Goal. Execute the fundamental principles of Joint Combat Airspace Doctrine, Organizations and Procedures.

Requirement. With the aid of references, apply airspace control doctrine from the Joint, Multi-Service, and Single Service perspective. Know the specific responsibilities and duties of the Joint Force Commander (JFC) and Airspace Control Authority (ACA), and how to develop the Airspace Control Plan (ACP) and the Airspace Control Order (ACO) to include:

(1) Know the JFC and ACA airspace control responsibilities:
    (a) Select the JFC's airspace control responsibilities.
    (b) Identify the ACA's responsibilities.
(2) Know the fundamentals of airspace control:
    (a) Identify the primary goal or purpose of airspace control.
    (b) Describe the use of airspace by all components.
(3) Know the organization, functions and responsibilities of the command and control elements of a joint force airspace control system. Identify the four basic functional activities that airspace command and control elements perform.
(4) Know and identify the different methods of airspace control.
(5) Know and identify the five jointly agreed procedural airspace control measures.

Performance Standards. Pass a written exam with a minimum score of 80%.

Prerequisite. ACC Joint Air Operations Staff Course (F19L2W2).

Reference. Joint Pub 3-52, Joint Pub 3-56.1, Joint Pub 5-00.2, ICAC2 Multi-service Procedures for Integrating Airspace Command and Control in the Combat Zone, and FM 100-103-2.

External Syllabus Support. MACCS MISTEX or operational joint environment.

OPS-446 10.0 T,R L/S Z

Goal. Execute the phases, inputs, processes, and outputs of the ATO cycle.

Requirement. With the aid of references, participate in the phases, inputs, processes of building and executing an ATO to include:

(1) Understand the process of building an ATO:
    (a) List, in order, the five phases of the ATO cycle that normally relate to ATO development in a typical Joint Air Operations Center (JAOC) Combat Plans.
(2) Understand the relationship of inputs and outputs, match them with the appropriate phases of a single ATO cycle:
    (a) Identify the key inputs and outputs of a single ATO cycle.
    (b) Identify the outputs of a single ATO as inputs to the appropriate phase of a future ATO.

Performance Standards. Pass a written exam with a minimum score of 80%.

Prerequisite. ACC Joint Air Operations Staff Course (F19L2W2).

Reference. Joint Pub 3-56.1, CJCS Manual 6120.05 (formerly Joint Pub 3-56.24), Tactical Command and Control Planning Guidance for Joint Operations, Joint Pub 5-03.1.

External Syllabus Support. MACCS MISTEX or operational joint environment.

OPS-447 10.0 T,R L/S Z

Goal. Develop the Airspace Control Plan (ACP) for joint combat operations.

Requirement. Aid in the development of an ACP in support of an operation/exercise.

Performance Standards. With the aid of references, write the theater ACP providing airspace control procedures for airspace users, operations planners, and airspace control personnel to include:

(1) Comprehend the planning considerations in designating BDZs and comprehend how to develop and apply BDZ departure and recovery procedures when writing an ACP:
    (a) Identify those factors that would be considered in developing BDZ departure and recovery procedures.
    (b) Designate which air bases in the Area of Responsibility (AOR) will have BDZs and develop departure and recovery procedures.
(2) Comprehend the parameters necessary to have an effective method of getting friendly aircraft through friendly air defense areas and apply them when writing an ACP.
(3) Identify parameters that are used for developing Minimum Risk Routes (MRRs).
(4) Comprehend and apply the planning considerations in designating a coordinating altitude.
(5) Identify parameters that are used in developing coordinating altitude.

Prerequisite. ACC Joint Air Operations Staff Course (F19L2W2).

Reference. Joint Pub 3-52, FMFRP 5-61, ICAC2 Multi-service Procedures for Integrating Airspace Command and Control in the Combat Zone, and FM 100-103-2.

External Syllabus Support. MACCS MISTEX or operational joint environment.

OPS-448 10.0 T,R L/S Z

Goal. Develop the ACO for joint combat operations.

Requirement. Create an ACO, utilizing information provided by higher headquarters.

Performance Standards. With the aid of references, write the theater ACO employing Airspace Control Measures (ACMs), Fire Support Coordination Measures (FSCMs), Air Defense Procedures, and standard procedures and graphics to include:

(1) Know airspace user requirements and major factors to consider when deconflicting combat airspace requirements.
(2) Identify major factors to consider when deconflicting airspace requirements.
(3) Know the various airspace user requirements for each service.

Prerequisite. MCCDC Course Identifier F19L2W2 ACC Joint Air Operations Staff Course.

Reference. Joint Pub 3-52, FMFRP 5-61, ICAC2 Multi-service Procedures For Integrating Airspace Command and Control in the Combat Zone, and FM 100-103-2.

External Syllabus Support. MACCS MISTEX or operational joint environment.

OPS-449 96.0 T,R L Z

Goal. Perform in an operational billet in the TACC.

Requirement. In a field environment, integrate and operate as a member of a crew in a TACC.

Performance Standards. Perform the following:

(1) Utilize the TBMCS.
(2) Fill appropriate TACC billet.

Reference. MCWP 3-25.4.

## 140. INSTRUCTOR QUALIFICATION TRAINING

1. Purpose. This POI is to be completed prior to designation as an instructor in a particular stage of training; i.e., MMT Leader Instructor, WTI, etc. Syllabus requirements are designated as Designations (DESG).

a. Prerequisite. The controller must be experienced enough to be able to instruct others in the ATC leadership and supervisory functions of this syllabus.

b. Academic Training. None.

c. Live and Simulator Event Training (2 Events, 640 Hours)

2. Instructor Qualification Training

DESG-500 240.0 T,E

Goal. Be designated an MMT Leader Instructor.

Requirement. Perform the duties of an MMT Leader Instructor.

Performance Standards. Graduate the MEWTI Course and be certified by MAWTS-1 to be an MMT Leader Instructor.

Prerequisite. DESG-390.

Reference. TEMINS orders to MAWTS-1 for the Marine Enlisted WTI school.

QUAL-501 400.0 T/E

Goal. Weapons Tactics Instructor (WTI).

Requirement. Perform the duties of a WTI.

Performance Standards. Graduate the WTI Course and be certified by MAWTS-1 to be a WTI.

Prerequisite. None.

Reference. MAWTS Course Catalog.

External Syllabus Support. TEMINS orders to MAWTS-1 as an enlisted WTI student.

160. EXPENDABLE ORDNANCE REQUIREMENTS. None.

170. PROFICIENCY INTERVALS. Table 1-16, 1-17, and 1-18 contain the proficiency intervals for the Combat Ready, Combat Qualification, and Full Combat Qualification levels.

Table 1-16.--ATCO Proficiency Interval for the Combat Readiness Training Level.

| STAGE/EVENT | HOURS | PROFICIENCY INTERVAL (Months) | CRP | T | C | R | E | CONDITIONS & REMARKS |
|---|---|---|---|---|---|---|---|---|
| KFAM-200 | 2.0 | 0 | 0 | X | | X | | |
| KFAM-201 | 2.0 | 0 | 0 | X | | X | | |
| KFAM-202 | 5.0 | 0 | 0 | X | | | | |
| KFAM-203 | 2.0 | 0 | 0 | X | | | | |
| KFAM-204 | 2.0 | 0 | 0 | X | | | | |
| KFAM-205 | 2.0 | 0 | 0 | X | | | | |
| KFAM-206 | 2.0 | 0 | 0 | X | | | | |
| KFAM-207 | 2.0 | 0 | 0 | X | | | | |
| KFAM-208 | 2.0 | 0 | 0 | X | | | | |
| KFAM-209 | 2.0 | 24 | 0 | X | | | | |
| KFAM-210 | 2.0 | 24 | 0 | X | | | | |
| KRFC-230 | 2.0 | 0 | 0 | X | | | | |

| STAGE/EVENT | HOURS | PROFICIENCY INTERVAL (Months) | CRP | T | C | R | E | CONDITIONS & REMARKS |
|---|---|---|---|---|---|---|---|---|
| KRFC-231 | 2.0 | 0 | 0 | X | | | | |
| KRFC-232 | 2.0 | 0 | 0 | X | | | | |
| KRFC-233 | 2.0 | 0 | 0 | X | | | | |
| KTGC-240 | 2.0 | 0 | 0 | X | | | | |
| KTGC-241 | 2.0 | 0 | 0 | X | | | | |
| KTGC-242 | 2.0 | 0 | 0 | X | | | | |
| KTGC-243 | 2.0 | 0 | 0 | X | | | | |
| FAM-211 | 2.0 | 36 | 0.3 | X | | X | | L |
| FAM-212 | 2.0 | 36 | 0.3 | X | | X | | L |
| FAM-213 | 5.0 | 24 | 0.3 | X | | X | | L/S |
| FAM-214 | 2.0 | 36 | 0.3 | X | | X | | L |
| FAM-215 | 3.0 | 24 | 0.3 | X | | X | | L |
| FAM-216 | 2.0 | 36 | 0.3 | X | | X | | L |
| FAM-217 | 2.0 | 36 | 0.3 | X | | X | | L |
| FAM-218 | 2.0 | 24 | 0.3 | X | | X | | L |
| FAM-219 | 2.0 | 24 | 0.3 | X | | X | | L |
| FAM-220 | 2.0 | 24 | 0.3 | X | | X | | L |
| SYS-250 | 40.0 | 0 | 0.5 | X | | | | S |
| SYS-251 | 40.0 | 0 | 0.5 | X | | | | S |
| SYS-252 | 40.0 | 24 | 0.6 | X | | X | | L/S |
| SYS-253 | 5.0 | 24 | 0.6 | X | | X | | L/S |
| SYS-254 | 8.0 | 0 | 0.5 | X | | X | | L/S |
| SYS-255 | 5.0 | 36 | 0.6 | X | | X | | L/S |
| SYS-256 | 5.0 | 0 | 0.5 | X | | X | | L/S |
| SYS-257 | 6.0 | 36 | 0.5 | X | | X | | L/S |
| SYS-258 | 5.0 | 0 | 0.5 | X | | X | | L/S |
| SIM-260 | 10.0 | 0 | 0.7 | X | | | | S |
| OPS-270 | 30.0 | 0 | 0.5 | X | | | | L |
| OPS-271 | 30.0 | 0 | 0.5 | X | | | | L |
| OPS-272 | 2.0 | 24 | 0.5 | X | | X | | L/S |
| CK-280 | 2.0 | 0 | 2.5 | X | | | X | L |
| CK-281 | 2.0 | 0 | 2.5 | X | | | X | L |

Table 1-17.--ATCO Proficiency Interval for the Combat Qualification Training Level.

| STAGE/EVENT | HOURS | PROFICIENCY INTERVAL (Months) | CRP | T | C | R | E | CONDITIONS & REMARKS |
|---|---|---|---|---|---|---|---|---|
| FAM-300 | 2.0 | 12 | 0.5 | X | | X | | L |
| FAM-301 | 4.0 | 24 | 0.5 | X | | X | | L/S |
| FAM-302 | 2.0 | 24 | 0.5 | X | | X | | L |
| FAM-303 | 2.0 | 24 | 0.5 | X | | X | | L/S |
| FAM-304 | 2.0 | 36 | 0.5 | X | | X | | L |
| FAM-305 | 3.0 | 24 | 0.5 | X | | X | | L/S |
| FAM-306 | 2.0 | 24 | 0.5 | X | | X | | L |
| FAM-307 | 2.0 | 24 | 0.5 | X | | X | | L |
| FAM-308 | 2.0 | 24 | 0.5 | X | | X | | L |
| FAM-309 | 2.0 | 24 | 0.5 | X | | X | | L |
| FAM-310 | 2.0 | 24 | 0.5 | X | | X | | L |
| FAM-311 | 2.0 | 24 | 0.5 | X | | X | | L |
| FAM-312 | 2.0 | 24 | 0.5 | X | | X | | L |
| FAM-313 | 4.0 | 24 | 0.5 | X | | X | | L |
| FAM-314 | 4.0 | 24 | 0.5 | X | | X | | L |
| FAM-315 | 6.0 | 24 | 0.5 | X | | X | | L/S |

| STAGE/EVENT | HOURS | PROFICIENCY INTERVAL (Months) | CRP | T | C | R | E | CONDITIONS & REMARKS |
|---|---|---|---|---|---|---|---|---|
| FAM-316 | 2.0 | 24 | 0.5 | X | | X | | L |
| SYS-320 | 16.0 | 36 | 0.5 | X | | X | | L/S |
| SYS-321 | 6.0 | 24 | 1.0 | X | | X | | L/S |
| SIM-330 | 20.0 | 36 | 1.0 | X | | X | | L/S |
| SIM-331 | 20.0 | 24 | 1.0 | X | | X | | L/S |
| SIM-332 | 8.0 | 24 | 1.0 | X | | X | | S |
| OPS-340 | 2.0 | 36 | 0.5 | X | | X | | S/L |
| OPS-341 | 10.0 | 24 | 0.5 | X | | X | | L/S |
| OPS-342 | N/A | 0 | 1.0 | X | | X | | L |
| OPS-343 | 4.0 | 24 | 1.0 | X | | X | | S/L |
| OPS-344 | 8.0 | 0 | 1.0 | X | | X | | L |
| OPS-345 | N/A | 0 | 1.0 | X | | X | | L |
| OPS-346 | 24.0 | 36 | 1.0 | X | | X | | L |
| OPS-347 | 24.0 | 24 | 1.0 | X | | X | | L/S |

Table 1-18.--ATCO Proficiency Interval for the Full Combat Qualification Training Level.

| STAGE/EVENT | HOURS | PROFICIENCY INTERVAL (Months) | CRP | T | C | R | E | CONDITIONS & REMARKS |
|---|---|---|---|---|---|---|---|---|
| FAM-400 | 2.0 | 24 | 0.1 | X | | X | | L |
| FAM-401 | 2.0 | 24 | 0.1 | X | | X | | L |
| FAM-402 | 2.0 | 24 | 0.1 | X | | X | | L |
| FAM-403 | 2.0 | 24 | 0.1 | X | | X | | L |
| FAM-404 | 4.0 | 24 | 0.1 | X | | X | | L |
| FAM-405 | 4.0 | 24 | 0.1 | X | | X | | L |
| FAM-406 | 2.0 | 24 | 0.1 | X | | X | | L |
| FAM-407 | 2.0 | 24 | 0.1 | X | | X | | L |
| FAM-408 | 4.0 | 24 | 0.1 | X | | X | | L |
| FAM-409 | 2.0 | 24 | 0.1 | X | | X | | L |
| FAM-410 | 4.0 | 24 | 0.1 | X | | X | | L |
| SIM-430 | 4.0 | 36 | 0.2 | X | | X | | L/S |
| SIM-431 | 32.0 | 24 | 0.2 | X | | X | | L/S |
| SIM-432 | 4.0 | 32 | 0.2 | X | | X | | L/S |
| SIM-433 | 10.0 | 36 | 0.2 | X | | X | | S |
| OPS-440 | 40.0 | 0 | 0.3 | X | | X | | L |
| OPS-441 | 20.0 | 36 | 0.3 | X | | X | | S/L |
| OPS-442 | 96.0 | 0 | 0.3 | X | | X | | L/S |
| OPS-443 | 172.0 | 0 | 0.3 | X | | X | | L/S |
| OPS-444 | 10.0 | 36 | 0.3 | X | | X | | L/S |
| OPS-445 | 10.0 | 36 | 0.3 | X | | X | | L |
| OPS-446 | 10.0 | 0 | 0.3 | X | | X | | L/S |
| OPS-447 | 10.0 | 0 | 0.3 | X | | X | | L/S |
| OPS-448 | 10.0 | 0 | 0.3 | X | | X | | L/S |
| OPS-449 | 96.0 | 36 | 0.4 | X | | X | | L |

180. ATCO EVENT UPDATE CHAINING. Table 1-19 contains the ATCO event update chaining.

Table 1-19.--ATCO Event Update Chaining.

| EVENTS | EVENTS UPDATED |
|---|---|
| 200 | |
| 201 | 200 |
| 203 | |
| 204 | |
| 205 | |
| 206 | |
| 207 | |
| 208 | |
| 209 | |
| 210 | |
| 211 | |
| 212 | |
| 213 | |
| 214 | 212 |
| 215 | |
| 216 | 212, 214 |
| 217 | 214, 216 |
| 218 | |
| 219 | |
| 220 | |
| 230 | |
| 231 | |
| 232 | |
| 233 | |
| 240 | |
| 241 | |
| 242 | |
| 243 | |
| 250 | |
| 251 | |
| 252 | |
| 253 | |
| 254 | |
| 255 | |
| 256 | |
| 257 | |
| 260 | |
| 270 | 250 |
| 271 | 251 |
| 272 | 213, 253 |
| 280 | 250, 270 |
| 281 | 251, 271 |
| 300 | |
| 301 | |
| 302 | |
| 303 | |
| 304 | |
| 305 | 209 |
| 306 | |
| 307 | 219, 255 |
| 308 | |
| 309 | |
| 310 | |
| 311 | |
| 312 | |
| 313 | 220 |

| EVENTS | EVENTS UPDATED |
|---|---|
| 314 | |
| 320 | 254, 260 |
| 321 | 220, 313 |
| 330 | 212, 301 |
| 331 | |
| 332 | |
| 340 | 200, 201 |
| 341 | 303 |
| 342 | 200, 201, 208, 209 |
| 343 | 218, 306 |
| 344 | 201, 212, 213, 302, 340 |
| 345 | 201, 212, 213, 302, 330, 340, 344 |
| 346 | |
| 347 | 220, 255, 307, 308 |
| 400 | |
| 401 | |
| 402 | 311, 312 |
| 403 | 218 |
| 404 | 219 |
| 405 | 219, 404 |
| 406 | |
| 407 | |
| 408 | |
| 409 | 316 |
| 410 | 220, 313 |
| 430 | 305 |
| 431 | 214, 300, 302, 315, 330 |
| 432 | 220, 313, 410 |
| 433 | |
| 440 | |
| 441 | 306, 343 |
| 442 | |
| 443 | |
| 444 | |
| 445 | |
| 446 | 305 |
| 447 | 346 |
| 448 | 305 |
| 449 | |

# CHAPTER 2

## ENLISTED AIR TRAFFIC CONTROLLER



### FIGURE

TABLES

# CHAPTER 2

# ENLISTED AIR TRAFFIC CONTROLLER

## 200. INTRODUCTION

1. The purpose of the Marine Aviation Training and Readiness (T&R) program is to provide the commander with standardized programs of instruction for all aviation personnel. The goal is to develop unit warfighting capabilities, not to measure the proficiency of individuals. Syllabi are based on specific performance standards designed to ensure proficiency in core competencies. An effective Training and Readiness (T&R) program is the first step in providing the Marine Air Ground Task Force (MAGTF) Commander with an Aviation Combat Element (ACE) capable of accomplishing any and all of its stated missions. The T&R program provides the fundamental tools for commanders to build and maintain unit combat readiness. Using these tools, unit training managers can construct and execute an effective training plan which supports the unit's mission essential tasks.

2. Unit training management is the application of the Marine Corps Training Principles and the Systems Approach to Training to satisfy the training requirements of Commanders at all levels in order to accomplish their wartime mission. Guidance concerning unit training management and the process for establishing effective unit training management programs are contained in MCRP 3-0A, *Unit Training Management (UTM) Guide*, and formed the basis for the development of this T&R manual. Familiarity with MCRP 3-0A will enhance understanding of the Systems Approach to Training used in T&R development and Marine Corps UTM principles.

3. To maintain congruity in aviation and ground T&R programs, CG TECOM (C4610) is coordinating an update to the aviation unit evaluation mechanism. Efforts are underway to incorporate Collective Training Standards (CTS) into aviation T&R manuals. The goal of this effort is to replace MCCRES Mission Performance Standards (MPS) with T&R CTS and utilize the T&R as the unit evaluation mechanism. Like MPS, CTS are criteria that specify mission and functional area unit proficiency standards for combat, combat support, and combat service support units.

4. The effort to replace MCCRES MPS with T&R manual CTS is in the development phase. The concept is to create separate unit chapters in all aviation T&R manuals which contain unit CTS in the form of unit events. CTS will be derived and implemented into T&R manuals using existing unit MCCRES MPS as a baseline. Unit evaluation will be standardized in T&R manuals, not in a separate document. CG TECOM (C4610) plans to cancel unit MCCRES orders as respective unit CTS chapters are approved. Until unit T&R CTS are formally approved, MCCRES shall be utilized as the aviation unit evaluation standard.

## 201. CORE COMPETENCIES/SKILLS

1. Core competency serves as the foundation of the T&R program. Core competencies are those core capabilities and skills which support the Mission Essential Task List (METL) derived from MWCP 3-2 and T/O mission statements, which are realistically expected to be assigned in combat. Core competencies for Air Traffic Control (ATC) are listed in paragraph 201.3.

2. Mission. Marine Air Traffic Control (MATC) conducts operations in support of Marine Corps Air Stations (MCAS), Marine Air Ground Task Forces (MAGTF), joint and coalition operations, and integrates into the Marine Air Command and Control System (MACCS) and Integrated Air Defense System (IADS) whenever possible.

3. Mission Essential Tasks

a. Provide tower, radar/non-radar approach, departure, and en-route air traffic control (ATC) services within assigned airspace.

b. Provide precision and non-precision navigational aids (NAVAIDS) and Automatic Carrier Landing System (ACLS) approach services.

c. Integrate, display, and disseminate appropriate information to the designated Joint Forces Air Component Commander (JFACC), Airspace Control Authority (ACA), Area Air Defense Commander (AADC), and adjacent agencies such as the Tactical Air Command Center (TACC), Tactical Air Operation Center (TAOC), Direct Air Support Center (DASC), and Ground Based Air Defense (GBAD) units and coordinate the activation of the Base Defense Zone (BDZ) as part of the IADS.

d. Provide combat and civil airspace management, control, and surveillance.

e. Provide ATC liaison personnel to coordinate ATC related issues between the MACCS and national/international civil ATC systems.

f. Develop, implement, and validate radar and non-radar IFR Terminal Instrument Procedures (TERPs) for use at pre-established and expeditionary airfields and integrate required ATC services into the existing civil/military, national/international ATC architectures.

g. Conduct amphibious/expeditionary operations to include the capability to phase control ashore.

h. Conduct MATC combat operations in a Nuclear, Biological, and Chemical (NBC) environment.

4. Detachment Core Capabilities

a. The core capable Marine Air Traffic Control Detachment (MATCD) establishes continuous all weather ATC services at one expeditionary airfield, with an echelon capability, or provides these services at a pre-established airfield. Additionally, the core capable detachment is able to provide mobile ATC services at two Forward Operating Bases (FOB). The detachment is able to provide ATC personnel to support MCASs in accordance with the Fleet Assistance Program (FAP).

b. Combat Crew

1 Watch Commander (WC)
1 Radar Watch Supervisor (RWS)
1 Radar Approach Controller (APC)
1 Arrival/Departure Controller (RATCF)
1 Flight Data/Clearance Delivery Controller (RFD)
1 Data Link Coordinator (DLC)

2 Radar Final Controllers (RFC)
1 Tower Watch Supervisor (TWS)
1 Local Controller (TLC)
1 Ground Controller (TGC)
1 Flight Data Controller (TFD)

NOTE: Number of crews required is driven by airfield operational hours and national/international ATC regulations.

c. MATC Mobile Team (MEU SOC)

1 ATC Officer
3 Controllers
1 NAVAID Technician
1 Communication Technician

NOTE: Denotes notional MMT. Actual MMT composition will be determined by mission assigned.

## 202. SUMMARY/INDEX OF LIVE/SIMULATED EVENTS

1. Combat Capable Stage (7251). Completed at AC(A1) formal school.

2. Combat Ready Stage (7257/7253). Table 2-1 contains a listing of the Combat Readiness training events and table 2-2 contains Combat Readiness knowledge based training events.

Table 2-1.--Combat Readiness Training Events.

| EVENT | GOAL | PAGE # |
|---|---|---|
| FAM-200 | Introduce two way communications with MACCS agencies. | 2-29 |
| FAM-201 | Observe MACCS agencies in an exercise. | 2-29 |
| SYS-220 | Operate fixed control tower equipment. | 2-30 |
| SYS-221 | Operate fixed radar equipment. | 2-30 |
| SYS-222 | Operate the Expeditionary Control Tower (AN/TSQ-120) and associated equipment. | 2-31 |
| SYS-223 | Operate the Remote Landing Site Tower (AN/TSQ-216) and associated equipment. | 2-32 |
| SYS-224 | Configure the Control and Communication Subsystem (AN/TSQ-131) and associated equipment for operation. | 2-32 |
| SYS-225 | Operate communication equipment in secure mode and in frequency agile mode (as applicable). | 2-33 |
| SYS-226 | Construct a field expedient antenna. | 2-33 |
| SIM-230 | Control precision/surveillance approaches using the simulation mode of the AN/TSQ-131. | 2-34 |
| SIM-231 | Encode and decode messages. | 2-34 |
| MMT-260 | Operate and use MATC Mobile Team (MMT) radios and equipment. | 2-34 |
| MMT-261 | Perform as an MMT member. | 2-35 |
| OPS-270 | Perform the duties of a Tower Flight Data Controller. | 2-35 |
| OPS-271 | Perform the duties of Clearance Delivery Controller. | 2-36 |
| OPS-272 | Perform the duties of a Tower Ground Controller. | 2-36 |
| OPS-273 | Perform the duties of a Radar Flight Data Controller. | 2-37 |

| EVENT | GOAL | PAGE # |
|---|---|---|
| OPS-274 | Perform the duties of a Radar Final Controller. | 2-37 |
| OPS-275 | Conduct launches and recoveries in EMCON conditions. | 2-38 |
| CK-280 | Qualify as a Tower Flight Data Controller. | 2-38 |
| CK-281 | Qualify as a Clearance Delivery Controller. | 2-39 |
| CK-282 | Qualify as a Tower Ground Controller. | 2-39 |
| CK-283 | Qualify as a Radar Flight Data Controller. | 2-39 |
| CK-284 | Qualify as a Radar Final Controller. | 2-40 |
| QUAL-290 | Qualify as an MMT Member. | 2-40 |
| QUAL-291 | Qualify as a Data Link Coordinator. | 2-41 |

Table 2-2.--Combat Readiness Knowledge Training Events.

| EVENT | GOAL | PAGE # |
|---|---|---|
| KFAM-200 | Memorize the airfield layout. | B-4 |
| KFAM-201 | General ATC knowledge. | B-6 |
| KFAM-202 | Local area/airfield specific knowledge. | B-7 |
| KFAM-203 | Emergency/Safety knowledge. | B-7 |
| KFAM-204 | Weather knowledge. | B-7 |
| KFAM-205 | Mission, tasks, and organization of the MACS. | B-7 |
| KFAM-206 | MATCD systems and support equipment. | B-8 |
| KFAM-207 | Tactical Landing Zone (TLZ). | B-8 |
| KFAM-208 | Obtain, record, and relay a close air support brief. | B-8 |
| KFAM-209 | Knowledge of organic communications equipment. | B-9 |
| KTWR-210 | Tower equipment. | B-13 |
| KTWR-211 | Strip marking. | B-14 |
| KTWR-212 | Airfield lighting. | B-14 |
| KTFD-240 | Phraseology/Communications. | B-14 |
| KTFD-241 | Clearance/Coordination. | B-15 |
| KTFD-242 | LOA’s and Facility Directives/Memos/Publications. | B-15 |
| KTGC-243 | Phraseology/Communication. | B-15 |
| KTGC-244 | Clearance/Coordination. | B-16 |
| KTGC-245 | Separation. | B-16 |
| KTGC-246 | LOA’s and Facility Directives/Memos/Publications. | B-16 |
| KRDR-220 | Radar equipment. | B-21 |
| KRDR-221 | Radar Strip marking. | B-22 |
| KRFD-250 | Phraseology/Communications. | B-24 |
| KRFD-251 | Clearance/Coordination. | B-24 |
| KRFD-252 | LOA’s and Facility Directives/Memos/Publications. | B-25 |
| KRFC-253 | Phraseology/Communication. | B-25 |
| KRFC-254 | Clearance/Coordination. | B-26 |
| KRFC-255 | Separation. | B-26 |
| KRFC-256 | LOA’s and Facility Directives/Memos/Publications. | B-27 |
| KDLC-263 | Data link theory. | B-27 |
| KDLC-264 | MATCALS Tactical Digital Information Link (TADIL) B and C. | B-27 |

3. Combat Qualification Stage (7252/7254). Table 2-3 contains a listing of the Combat Qualification training events and table 2-4 contains Combat Qualification knowledge based training events.

Table 2-3.--Combat Qualification Training Events.

| EVENT | GOAL | PAGE # |
|---|---|---|
| SIM-330 | Conduct ATC operations in an NBC environment. | 2-42 |
| SIM-331 | Control in an ADC environment using the simulation mode of the AN/TSQ-131. | 2-42 |
| SIM-332 | Perform non-radar approach control services. | 2-42 |
| SIM-333 | Plan and develop MATCD communications interface with the MACCS and external agencies. | 2-43 |
| OPS-370 | Perform the duties of a Tower Local Controller. | 2-43 |
| OPS-371 | Perform the duties of an Arrival/Departure (RATCF) Controller. | 2-44 |
| OPS-372 | Perform the duties of an Approach Controller. | 2-44 |
| OPS-373 | Perform as an MMT Leader. | 2-45 |
| OPS-374 | Conduct an ATC tactical crew brief. | 2-45 |
| OPS-375 | Extract pertinent information from the Air Tasking Order (ATO) and Air Control Order (ACO). | 2-46 |
| OPS-376 | Prepare, request, and supervise an FAA flight inspection/certification. | 2-46 |
| OPS-377 | Identify and plot air control measures on a map. | 2-46 |
| CK-380 | Qualify as a Tower Local Controller. | 2-47 |
| CK-381 | Qualify as an Arrival/Departure (RATCF) Controller. | 2-47 |
| CK-382 | Qualify as an Approach Controller. | 2-48 |
| QUAL-390 | Be designated an On The Job Training Instructor (OJTI). | 2-49 |
| QUAL-391 | Qualify as an MMT Leader in a field exercise. | 2-49 |

Table 2-4.--Combat Qualification Knowledge Training Events.

| EVENT | GOAL | PAGE # |
|---|---|---|
| KFAM-300 | Obtain working knowledge of communication plans and orders. | B-9 |
| KFAM-301 | Describe the communication flow within the MACCS. | B-9 |
| KFAM-302 | Demonstrate knowledge of Electronic Warfare and its effects on MATCD equipment. | B-9 |
| KFAM-303 | Obtain a basic knowledge of the Early Warning and Control (EW/C) site/TAOC. | B-10 |
| KFAM-304 | The role of Shore Air Defense (SHORAD) detachment and its integration into the MACCS. | B-10 |
| KFAM-305 | Forward Operating Bases (FOB) and how the MATCD supports them. | B-10 |
| KTWR-310 | Tower equipment as it relates to tower local control. | B-17 |
| KTWR-311 | General ATC knowledge as it applies to tower local control. | B-17 |
| KTWR-312 | Local area/airfield specific knowledge as it applies to tower local control. | B-18 |
| KTWR-313 | Strip marking as applied to tower local control. | B-18 |
| KTWR-314 | Emergency/Safety knowledge as applied to tower local control. | B-18 |

| EVENT | GOAL | PAGE # |
|---|---|---|
| KTWR-315 | Weather knowledge as applied to tower local control. | B-19 |
| KTWR-316 | Airfield lighting knowledge as applied to tower local control. | B-19 |
| KTLC-340 | Communications on tower local control. | B-20 |
| KTLC-341 | Clearance/Coordination on tower local control. | B-20 |
| KTLC-342 | Spacing/Sequencing/Separation on tower local control. | B-20 |
| KTLC-343 | LOA’s and Facility Directives/Memos/Publications for tower local control. | B-21 |
| KRDR-320 | Radar equipment applied on radar approach control. | B-22 |
| KRDR-321 | Local area/airfield specific knowledge applied on radar approach control. | B-22 |
| KRDR-322 | General ATC knowledge applied on radar approach control. | B-23 |
| KRDR-323 | Strip marking applied on radar approach control. | B-23 |
| KRDR-324 | Emergency/Safety applied on radar approach control. | B-24 |
| KRDR-325 | Weather knowledge applied on radar approach control. | B-24 |
| KAPC-350 | Advanced Air Traffic Control applied on radar approach control. | B-28 |
| KAPC-351 | Advanced local area/airfield specific knowledge on radar approach control. | B-28 |
| KAPC-352 | Non-radar knowledge applied on radar approach control. | B-29 |
| KAPC-353 | Coordination as applied on radar approach control. | B-29 |
| KAPC-354 | Clearance knowledge as applied on radar approach control. | B-30 |
| KAPC-355 | Spacing and sequencing as applied on radar approach control. | B-31 |
| KAPC-356 | Phraseology/Communication as applied on radar approach control. | B-32 |
| KAPC-357 | Separation knowledge as applied on radar approach control. | B-32 |
| KAPC-358 | LOA’s and Facility Directives/Memos/Publications. | B-33 |

4. Full Combat Qualification Stage (7252/7254/7291). Table 2-5 contains a listing of the full-combat qualification training events and table 2-6 contains Full Combat Qualification knowledge based training events.

Table 2-5.--Full Combat Qualification Training Events.

| EVENT | GOAL | PAGE # |
|---|---|---|
| OPS-470 | Develop an embarkation plan for the MATCD. | 2-50 |
| OPS-471 | Perform as a MATCD Non-Commissioned Officer in Charge (NCOIC). | 2-50 |
| OPS-472 | Perform as a MACS Operations Chief (Ops Chief). | 2-51 |
| DESG-490 | Be designated as a Tower Watch Supervisor. | 2-51 |
| DESG-491 | Be designated as a Control Tower Chief. | 2-52 |
| DESG-492 | Be designated as a CTO Examiner (CTOE). | 2-53 |
| DESG-493 | Be designated as a Radar Watch Supervisor. | 2-53 |
| DESG-494 | Be designated as a Radar Chief. | 2-54 |
| DESG-495 | Perform as an ATC Specialist Examiner (ATCSE). | 2-55 |
| DESG-496 | Perform as a Facility Watch Officer (FWO)/MATCD Watch Commander (WC). | 2-55 |

| EVENT | GOAL | PAGE # |
|---|---|---|
| DESG-497 | Perform the duties of a Training and Standardization Supervisor (TSS). | 2-56 |
| DESG-498 | Be designated as a Terminal Instrument Procedures (TERPS) Specialist. | 2-56 |

Table 2-6.--Full Combat Qualification Knowledge Training Events.

| EVENT | GOAL | PAGE # |
|---|---|---|
| KFAM-400 | Development process of the Air Tasking Order (ATO) and Air Control Order (ACO). | B-11 |
| KFAM-401 | Fundamentals of Rear Area Security (RAS). | B-11 |
| KFAM-402 | Site selection process for a MATCD. | B-11 |
| KFAM-403 | Develop and staff an LOA. | B-12 |
| KFAM-404 | Develop and staff an FAA waiver. | B-12 |
| KFAM-405 | Terminal Instrument Procedures (TERPS). | B-12 |
| KFAM-406 | ATC tactical crew brief. | B-12 |
| KFAM-407 | Facility/Personnel/Operations/Training management. | B-13 |

5. Instructor Under Training (7252/7254/7291). Table 2-7 contains a listing of the instructor under training events.

Table 2-7.--Instructor Under Training (IUT) Training Events.

| EVENT | GOAL | PAGE # |
|---|---|---|
| QUAL-500 | Be designated as an OJTI Course Instructor | 2-57 |
| QUAL-501 | Be designated as a Marine Enlisted Weapons Tactics Instructor | 2-57 |

6. Operator Core Skills. Core skills are depicted in the following matrix and directly support the METL for each unit. Core skills shall be a determining factor in developing T&R training requirements. Special skills and training requirements must receive appropriate prioritization and emphasis based on training needs and the likelihood of those types of missions being assigned during operations.

Table 2-8.--Core Skills and Special Skills Matrix.

| CORE SKILLS | | | | | | | | SPECIAL SKILLS | | |
|---|---|---|---|---|---|---|---|---|---|---|
| METL | FAM | SYS | SIM | MMT | OPS | CK | QUAL | OPS | DESG | QUAL |
| A | | 220, 221 | 331, 332 | | 270-275, 370-372 | 280-284, 380-382 | 390 | 471 | 490-497 | 500 |
| B | | 221 | 331 | | 371, 372, 274, 376 | 284, 381, 382 | | 471 | 493, 494, 495, 497 | |
| C | 200, 201 | 224, 223, 225 | 230, 231, 333 | | 374, 375 | | 291 | 471 | 493, 496 | 501 |
| D | | 224 | | | 372 | 382 | | 471 | 493, 496 | |

| CORE SKILLS | | | | | | | | SPECIAL SKILLS | | |
|---|---|---|---|---|---|---|---|---|---|---|
| METL | FAM | SYS | SIM | MMT | OPS | CK | QUAL | OPS | DESG | QUAL |
| E | | | | | 374-376 | | | 471, 472 | 496 | |
| F | | | | | | | | 471 | 498 | |
| G | 200, 201 | 222-226, 330 | 231 | 260, 261 | 373 | | 290, 291, 391 | 470, 471 | 496 | 501 |
| H | | 330 | | | | | | 471 | | |

203. UNIT TRAINING POLICIES

1. The unit's training program emphasizes qualifications and the overall combat readiness of the unit. Individual training serves as the building block for overall unit readiness. However, unit training will never be compromised for the training of a select, few individuals. Squadron and battalion commanding officers will ensure that this training philosophy is implemented. Unit training must predominate, and squadrons must tailor their training plans to ensure unit combat readiness.

2. The training of Marines to perform as an integral aviation unit in combat lies at the heart of the T&R program. Unit readiness and individual readiness are directly related. Individual training and the mastery of individual core skills serve as the building blocks for unit combat readiness. A Marine's ability to perform those critical skills required in combat is essential.

3. Commanders shall ensure that all tactical training is conducted to a MCCRES standard. The MCCRES, as outlined in MCO P3501.9, is the unit training standard, and all syllabus events shall be tailored to meet MCCRES requirements. Commanders at all levels are responsible for effective aviation training. The conduct of training in a professional manner consistent with Marine Corps standards cannot be over emphasized.

4. Commanders must be cognizant of the numerous factors affecting unit training on a daily basis. Factors which all commanders must address include, but are not limited to:

a. Efficiency. Time and resources expended are measurements of training efficiency. Commanders must ensure that all training increases combat readiness. Unit personnel shall thoroughly plan and effectively execute training to maximize the return on their time and effort.

b. Individual Differences. Commanders must recognize the differences inherent in each individual and should mold flexible training programs to accommodate those differences.

c. Decentralization of Training. The lowest echelon possible shall be responsible for conducting training. Each senior level of command must monitor subordinate commands to ensure safe and efficient training requirements.

5. Commanders shall provide personnel the opportunities to attend formal and operational level courses of instruction as required by this Manual. Attendance at all formal courses must enhance the warfighting capabilities of the unit.

6. Risk Management. Operational Risk Management (ORM) is a process to aid commanders in accomplishing their missions while protecting the force. Commanders, leaders, maintainers, planners and schedulers should integrate risk assessment in the decision making process and implement hazard controls to eliminate risk or reduce it to an acceptable level.

7. MACCS Integrated System Training. All elements of the MACCS shall maintain the capability to effectively function as part of an integrated airspace command and control system. In that large exercises may not always offer sufficient training opportunity for all crew members, and in many cases do not offer sufficient latitude to refine capability upon arrival, the MACCS should conduct MACCS Integrated System Training Exercises (MISTEX) on a regular basis to qualify units and personnel per their respective T&R syllabus. MISTEXs should focus on the establishment of necessary communications and datalinks between MACCS agencies, and incorporate sufficient simulation and Marine Simulation Event List (MSEL) items to exercise and analyze system integration, crew coordination, and critical information flow wherever possible. Tactical Digital Information Link (TADIL) capable agencies should conduct frequent "Link" training exercises to maintain proficiency.

## 204. MARINE AIR TRAFFIC CONTROLLER TRAINING PROGRESSION PHILOSOPHY

1. Marine Air Traffic Controller training is unique amongst other MACCS MOS training because of the controller's requirement to function in tactical and civilian ATC environments simultaneously, whether assigned to a Marine Air Traffic Control Detachment (MATCD) or a MCAS. The controller provides Marine aviation the requisite interface required to conduct wartime operations or peacetime training exercises, integrating seamlessly into the U.S. National Airspace System (NAS) or a sovereign nation's airspace. The extensive training and qualification requirements which controllers are required to meet, under both Federal Aviation Administration (FAA) and international regulations, ensures the ability of Marine aviation to operate safely and legally anywhere in the world.

2. Marine Air Traffic Controller training utilizes a building block approach. At the entry level school (100-level) the Marine is taught ATC regulations, procedures, and operating techniques. Basic skills required by the controller are taught using state of the art simulation and intensive classroom instruction. Upon completion of the MOS producing school, the controller possesses the same certification obtained by FAA controllers graduating from the National FAA Air Traffic Control School. This training enables the controller to understand and apply ATC rules and regulations, qualify and perform the functions of a Marine Air Traffic Controller in an MATCD or an MCAS.

3. In the 200-level training block, the controller applies the skills and knowledge obtained at the 100-level school by manning crew positions, primarily at an MCAS, under the direct supervision of qualified controllers in an OJT environment. The initial individual core skills are learned and mastered in this level. Basic ATC skills and techniques are learned through

a mix of live and simulated training tasks. Training progresses incrementally and includes introduction to the Marine Air Traffic Control Detachment (MATCD) equipment, the Marine Air Command and Control System (MACCS), the MATC Mobile Team (MMT) and Data Link Coordinator (DLC). This level culminates with the controller achieving Naval Air Training and Operating Procedures Standardization (NATOPS) certifications on junior ATC operating positions as a Tower Flight Data Controller/Tower Ground Controller and/or Radar Flight Data Controller/Radar Final Controller. At this point the controller is combat ready and fully prepared to fill a combat crew member position in a MATCD or a MMT.

4. In the 300-level training block, the controller progresses through the training tasks relating to the remaining core skills required to be qualified to man all combat crew member positions as identified in the MATCD core capabilities. The controller may continue training at a MCAS and achieve NATOPS certifications on senior operating positions, Tower Local Control and/or Radar Approach Control. The controller will begin to integrate acquired ATC skills into the MACCS, Joint Air Command and Control Systems, and international military and civilian command and control to include ATC architectures. During this period, training is focused on the expeditionary capabilities of the MATCD with additional qualification as an MMT Leader. Additional formal training will occur late in the 300-level through completion of the On the Job Trainer Instruction (OJTI), Advanced MATCALS Operators Course, and Advanced Radar Air Traffic Control Course (ARATCC). These courses, in combination with the completion of his core skills training, will prepare the controller to function as a trainer for controllers entering the 200- and 300-levels.

5. In the 400-level, the controller functions solely in managerial leadership positions as Tower or Radar Watch Supervisor, Branch and/or Watch Crew Chief, MATCD NCOIC, and MACS Operations Chief. As such, the controller assists facility officers, detachment commanders and operations officers in the planning and execution of all phases of garrison and expeditionary ATC services and the integration of this ability into the warfighting capability of Marine Corps aviation worldwide. They will require extensive knowledge and experience running the gamut of ATC and air command and control arenas. Formal training at the Joint Air Command and Control Course, the Multi-TADIL Advanced Joint Interoperability Course, Air Traffic Control Managers Course, Military Airspace Management Course, and Terminal Instrument Procedures Course will complete the knowledge base that enables the controller to be fully functional as an assistant planner in joint and combined operations and exercises involving the MACCS. Additionally, the controller will bring a broad base of experience to the Marine Corps ability to integrate seamlessly into the civil and military ATC architecture in the U.S. and internationally.

6. In the 500-level, the controller progresses toward designation as an On The Job Training Instructor (OJTI) Instructor and a Marine Enlisted Weapons and Tactics Instructor (MEWTI). At the completion of this level, the controller is capable of instructing junior controllers in all aspects of ATC, including both the garrison and field environment.

## 205. TRAINING PROGRESSION MODEL FOR ENLISTED AIR TRAFFIC CONTROLLERS

1. The Training Progression Model for the enlisted ATC is depicted in figure 2-1. This model depicts the **logical progression of qualifications** within a unit. The Combat Capable level is achieved at the completion of initial MOS

entry-level school. After completion of the Combat Capable level, unit personnel move to the Combat Ready level.

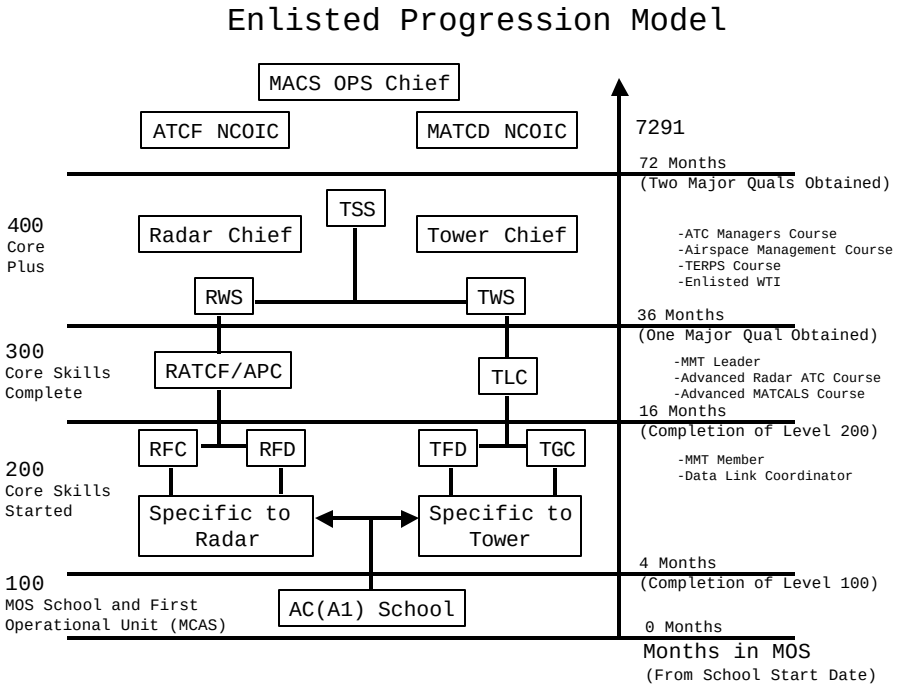


Figure 2-1.--Enlisted Air Traffic Controller Progression Model.

2. The Combat Ready level should take the controller who has completed initial MOS skills training and make them **proficient** in core competencies. With successful completion of the Combat Ready level, unit personnel move to the Combat Qualification level.

3. The Combat Qualification level will be that portion of the model that produces combat leaders and fully qualified crew members. The personnel that are being trained in the Combat Qualification level are those Marines a commanding officer deems capable of directing the actions of subordinates during wartime scenarios.

4. The Full Combat Qualification level will contain special skills and qualifications. These skills or qualifications are not prerequisite to Combat Qualification or the ability to function as combat leaders, but are those for which a certain number of trained individuals or crews must be maintained to accomplish special missions or tasks.

5. The training progression model provides training officers with a valuable tool to develop training plans. With a clear progression of qualifications delineated, and an emphasis on the qualification of Combat Capable and Combat Ready personnel, training officers have the ability to produce viable training plans. Units will use the model as a point of departure to generate weekly, monthly, quarterly and annual training plans.

7. This training progression philosophy applies to the Marine Corps Reserve Air Traffic Controller as well. However, not all training requirements will be achievable by Reserve Marines. Therefore, all applicable training tasks have been annotated with the symbol "Z" in the event header.

206. PROGRAMS OF INSTRUCTION (POI) FOR ENLISTED AIR TRAFFIC CONTROLLERS

1. Basic or Transition Air Traffic Controller

| WEEKS | COURSE/PHASE | ACTIVITY |
|---|---|---|
| 1-16 | AC(A1) Basic Air Traffic Control School, [Combat Capable] | NATTC |

2. Refresher Air Traffic Controller

| WEEKS | COURSE/PHASE | ACTIVITY |
|---|---|---|
| 17 – 64 | Combat Ready | MACS/MCAS |
| 64 – 152 | Combat Qualification | MACS/MCAS |
| 152 – 312 | Full Combat Qualification | MACS/MCAS |

210. GROUND/ACADEMIC TRAINING

1. Academic training in table 2-9 shall be conducted for each phase/stage of the syllabus. The lectures are strongly encouraged to be incorporated as part of a sound training plan. Where indicated, standardized academic training materials exist and may be obtained from the activity listed as the sponsor.

Table 2-9.--Recommended T&R Lectures.

| LECTURE CODE | LECTURE TITLE | SPONSOR |
|---|---|---|
| | **200-Level: Combat Ready Training** | |
| A-01* | MAGTF Organization | MCCES |
| A-02* | MACCS Organization | MCCES |
| | The Six Functions of Marine Aviation | |
| A-03* | Control of Aircraft & Missiles | MAWTS-1 |
| A-04* | Offensive Air Support | MAWTS-1 |
| A-05* | Assault Support | MAWTS-1 |
| A-06* | Electronic Warfare | MAWTS-1 |
| A-07* | Aerial Reconnaissance | MAWTS-1 |
| A-08* | Anti-Air Warfare | MAWTS-1 |
| A-09* | Air Tasking Order/Special Instructions | MCCES |
| A-10* | MACCS Training Management | Local MACG |
| A-11* | MACCS Reference Material | MCCES |
| A-12* | Local AOR Contingencies & OP PLANS | Local MACG |
| A-13* | ROE Overview | Local MACG |
| A-14* | MACCS Communications | MAWTS-1 |
| A-15* | TBMCS Overview | MAWTS-1 |
| A-16* | Data Link Symbology | USAADASCH, MARCORDET |
| A-17* | Manual Crosstell Procedures | USAADASCH, MARCORDET |
| A-18* | Encryption & Authentication Procedures | MCCES |
| A-19* | COMSEC & Crypto Handling | MCCES |
| A-20 | Communications plans and orders | MAWTS-1 ASP |

| LECTURE CODE | LECTURE TITLE | SPONSOR |
|---|---|---|
| | **300-Level: Combat Qualified Training** | |
| B-01* | Missile and UAV Threat to the MAGTF | MAWTS-1 |
| B-02* | Fixed Wing Threat to the MAGTF | MAWTS-1 |
| B-03* | Rotary Wing Threat to the MAGTF | MAWTS-1 |
| B-04* | REC Threat | MAWTS-1 |
| B-05* | Armor Threat to the MAGTF | MAWTS-1 |
| B-06* | AOR Specific Threat & OP PLANS | Local MACG |
| | MACCS Agencies | |
| B-07* | TACC | MAWTS-1 |
| B-08* | TAOC | MAWTS-1 |
| B-09* | DASC | MAWTS-1 |
| B-10* | ATC Detachment | MAWTS-1 |
| B-11* | LAAD Bn | MAWTS-1 |
| B-12* | VMU | MAWTS-1 |
| B-13* | MWCS | |
| B-14* | AC2W-ISR | MAWTS-1 |
| B-15* | Multi-TADIL Network | MAWTS-1 |
| B-16* | USMC Aviation Ordnance | MCCES |
| B-17* | Phasing Control Ashore | MAWTS-1 |
| B-18* | Airspace Planning/Management (Combat Airspace) | Local MACG |
| B-19* | Tanker Management | MAWTS-1 |
| B-20* | Armed Reconnaissance | MAWTS-1 |
| B-21* | UAV Overview | MAWTS-1 |
| B-22* | Link Architecture & Procedures | Local MACG |
| B-23* | Introduction to Personnel Recovery | MAWTS-1 |
| B-24* | NEO Execution | MAWTS-1 |
| B-25* | Execution Checklist | MAWTS-1 |
| B-26 | Communications lines between ATC and other MACCS agencies | MAWTS-1 WTI * |
| B-27 | Introduction to MMT | MAWTS-1 ASP |
| B-28 | Introduction to TERPS | NATTC |
| | **400-Level: Full Combat Qualified Training** | |
| C-01* | Integrated Combat Airspace Command & Control ($ICAC^2$) | Local MACG<br>MAWTS-1 |
| C-02* | Joint Air Operations | MAWTS-1 |
| C-03* | TBM and CM Defense | MAWTS-1 |
| C-04* | JTAO Procedures | MCCES |
| C-05* | Law of War and ROE | MAWTS-1 |
| C-06* | SIS Aircraft | MAWTS-1 |

(*) The lecture code is standardized throughout all MACCS related syllabi, and are used to link the ATRIMS software to a specific T&R event within this syllabus. Lecture Codes may not be listed sequentially.

2. External academic courses of instruction required to complete the syllabus are listed below:

| COURSE | ACTIVITY |
|---|---|
| Air Traffic Controller Course | NATTC, FL |
| Marine Air Traffic Control & Landing System Advanced Operator Course | NATTC, FL |
| Advanced Radar Air Traffic Control Course | NATTC, FL |
| ATC Managers Course | NATTC, FL |
| Terminal Instrument Procedures Course | Keesler AFB |
| Military Airspace Management Course | Keesler AFB |
| Enlisted Weapons Tactics Instructor Course | MAWTS-1 |
| Joint Aerospace Command and Control Course(JAC2C) | C2WS |
| Multi-TADIL Advanced Interoperability Course | JMTS |

## 211. TRAINING REFERENCES

1. Tables 2-10 through 2-16 provide training references which shall be utilized to ensure safe and standardized training procedures, performance steps, grading criteria, and equipment operation.

Table 2-10.--FAA Training References.

| FAA | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| FAA 7110.65 | Air Traffic Control Manual |
| FAA 7110.10 | Flight Services |
| FAA 7210.3 | Facility Operation and Administration |
| FAA 7400.8 | Special Use Airspace |
| FAA 7220.1 | Certification and Rating Procedures |
| FAA 7340.1 | Contractions |
| FAR 65 | Certification of Airmen Other Than Flight Crewmembers |
| FAR 91 | General Operating and Flight Rules |
| | Aeronautical Information Manual (AIM) |
| | IFR Supplement |
| | VFR Supplement |
| | Low Altitude United States |
| | High Altitude United States |
| FAA Handbook OAP 8200.1 | U.S. Standard Flight Inspection Manual |
| | Notices to Airmen (NOTAM) |
| AP1 A | Area Planning for North and South America |
| AP1 B | Military Training Routes for North and South America |
| | Local Sectional |
| DOC-4444/501 | ICAO Rules of the Air and ATC Service |
| | Airfield Operations Manual (AOM) |
| | Facility Manual (FACMAN) |
| | Daily Flight Schedule |
| | RATCF DAIR Operator's Manual |
| | Facility Directives |
| | Letters of Agreement |
| | Facility Memorandums |
| | Facility Forms |
| | Pilot Controller Handbook (PCH) |

Table 2-11.--Navy Training References.

| NAVY | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| SECNAVINST 5216.5C | Memorandum of Agreement |
| OPNAVINST 5510.1 | Department of the Navy Information and Personnel Security Program Regulation |
| OPNAVINST 3770.2 | Airspace Procedures Manual |
| OPNAVINST 3722.16 | U.S. Standard Flight Inspection Manual |
| NAVAIR 00-80T-114 | ATC Facilities Manual |
| NAVAIR 00-80T-115 | Expeditionary Airfields |
| NAVAIR 51-50AAA-2 | Airfield Markings |

Table 2-12.--Marine Corps Training References.

| MARINE CORPS | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| MCDP 6 | Command and Control |
| MCWP 3-2 | Aviation Operations |
| MCWP 3-22 | Anti-Air Warfare |
| MCWP 3-22.2 | SEAD |
| MCWP 3-23 | OAS |
| MCWP 3-24 | Assault Operations |
| MCWP 3-25 | Control of Aircraft and Missiles |
| MCWP 3-25A | Multi-service Procedures for JATC |
| MCWP 3-25B | Multi-Service Brevity Codes |
| MCWP 3-25C | Introduction to TADIL-J |
| MCWP 3-25D | Integrated Combat Airspace Command and Control |
| MCWP 3-25.3 | MACCS Handbook |
| MCWP 3-25.4 | TACC Handbook |
| MCWP 3-25.5 | DASC Handbook |
| MCWP 3-25.7 | TAOC Handbook |
| MCWP 3-25.8 | MATCD Handbook |
| MCWP 3-25.9 | MACCS Communcations Handbook |
| MCWP 3-11.2 | Marine Rifle Squad |
| MCWP 3-11.3 | Scouting and Patrolling |
| MCWP 3-11.4 | Helicopterborne Operations |
| MCWP 3-11.4A | Helicopter Insert/Extraction |
| MCWP 3-17 | Engineer Operations |
| MCWP 3-31.5 | Ship to Shore Movement |
| MCWP 3-33 | Military Operations Other Than War (MOOTW) |
| MCRP 3-33A | Counter-Guerilla Operations |
| MCWP 3-33.2 | Civil Disturbance |
| MCWP 3-33.6 | Humanitarian Assistance Operations |
| MCWP 3-36 | Command and Control Warfare |
| MCWP 3-36.1 | Electronic Warfare |
| MCWP 3-37 | MAGTF NBC Defense Handbook |
| MCWP 3-37A | NBC Field Handbook |
| MCWP 3-37.5 | NBC Defense of Fixed Sites, Ports, and Airfields |
| MCWP 6-2 | MAGTF C-2 |
| MCWP 6-22 | Communications and Information Systems |
| MCWP 6-22A | Talk II SINCGARS |

| MARINE CORPS | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| MCRP 6-22D | Field Antenna Handbook |
| MCRP 3-02E | Individual Guide to Terrorism |
| MCWP 5-1 | Marine Corps Planning Process |
| MCWP 5-11 | MAGTF Aviation Planning |
| MCWP 5-11.1A | Aviation Planning Documents |
| MCO 1510.28A | Marine Air Traffic Control (ATC) and ATC Maintenance Personnel Training, Qualification, and Proficiency Records |
| MCO 3501.9B | Marine Corps Combat Readiness Evaluation System (MCCRES) |
| MCO 5600.20 | Marine Corps War Fighting Publication System |
| ATO/ACO | Air Tasking Order/Air Control Order |
| CMS-1 | Communications Security Material System Manual |
| ACP | Aviation Campaign Plan |
| SPINS | Special Instructions |
| | Marine Aviation Command and Control and Control System Information Flow Model dtd 30 Sep 1988 |

Table 2-13.--Maintenance Training References.

| MAINTENANCE | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| | MATCALS Controller Handbook |
| TM 2000 Series | HMMWV and Tactical Quiet Generator |
| TM 119-MA-OMI-010 | Part II Expeditionary Control Tower Equipment Basic Course SA2257TSQ-120 |
| | MATCALS System Operation Manual |
| | MATCALS Operator's Handbook |

Table 2-14.--MAWTS-1 Training References.

| MAWTS-1 | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| | MAWTS Course Catalog |
| | MAWTS-1 ASP |
| | MAWTS-1 SOP |
| | MAWTS-1 MACCS Reference Guide |
| | MMT SOP |

Table 2-15.--MCI Training References.

| MCI COURSES | |
|---|---|
| **MCI** | **TITLE** |
| 25.30 | VHF (FM) Field Radio Equipment |
| 25.32 | HF/UHF Radio Equipment |
| 04.11 | Introduction to Amphibious Embarkation |
| 04.7 | Fixed Wing Embarkation |

Table 2-16.--Joint Multiservice and Allied Publications Training References.

| JOINT MULTISERVICE AND ALLIED PUBS | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| Joint Pub 1 | Joint Warfare of the US Armed Forces |
| Joint Pub 1-02 | DOD Dictionary of Military and Associated Terms, March 1994 |
| Joint Pub 0-2 | Unified Action Armed Forces |
| Joint Pub 3-0 | Doctrine for Joint Operations |
| Joint Pub 3-01-2 | Joint Doctrine for Theater Counter Air/Air Defense |
| Joint Pub 3-01-3 | Air Defense from Overseas Land Areas |
| Joint Pub 3-01.5 | Doctrine for Joint Theater Missile Defense |
| Joint Pub 3-52 | Doctrine for Joint Airspace Control in a Combat Zone |
| Joint Pub 3-56.1 | Command and Control for Joint Air Operations/Service Operations |
| Joint Pub 3-56-23 | Air Control/Air Defense Procedures |
| Joint Pub 3-56.24 | Tactical Command and Control Planning Guidance and Procedures for Joint Operations |
| Joint Pub 5-03.1 | Joint Operations Planning and Execution System |
| Module 1 | Introduction to the JTAO Interface, JTAO CBT Modules |
| Module 2 | Introduction to TADIL Operations, JTAO CBT Modules |
| Module 4 | Introduction to Naval Warfare, JTAO CBT Modules |
| Module 5 | NTDS and ATDS, JTAO CBT Modules |
| Module 6 | Ground Elements of the Theater Air Control System (TACS), JTAO CBT Modules |
| Module 7 | Airborne Elements of the Air Control System (AEACS), CBT Modules |
| Module 8 | Army Air Defense Command and Control System (AADCCS), CBT Modules |
| Module 9 | Service and Joint Communications Systems in the JTAO Interface, JTAO CBT Modules |
| ACCI 13-1OC | Air Operations Center |
| ACCR 55-44 | Theater Air Control System Modular Control System |
| AFM 2-1 | Tactical Air Operations, Counter Air, Close Air Support and Air Interdiction |
| FM 44-100 | U.S. Army Air Defense Operations |
| FM 44-100-2 | Air Defense Reference Handbook |
| FM 44-85 | Patriot Battalion and Battery Operations |
| FM 44-63 | FAADS/SHORAD Operations, Jane's Land Based Air Defense |
| FM 100-103 | Army Airspace Command and Control in a Combat Zone |
| | TBMCS Operator/Technician Course Advance Sheets |
| | ADS Software User's Manual (SUM) |
| | Operator Familiarization Course Training Materials for the Advanced Planning System (APS) |
| | Air Operations Center, ACCI 13, 1 Feb 95 |
| | Air Combat Command (ACC) C4I Systems Guide, Vol I, HQ ACC/SC, 24 Dec 1994 |
| | A History of the Contingency Theater Automated Planning System (CTAPS), Part One, Background, HQ TAC, Jan 91 |
| | Software User's Manual (SUM) for the Human-Machine-Interface (HMI) of the Theater Battle Management Core System (TBMCS) |

| JOINT MULTISERVICE AND ALLIED PUBS | |
|---|---|
| **MANUAL/ORDER** | **TITLE** |
| | Air Combat Command Computer Systems Squadron, Langley Air Force Base, VA 23665-2091 |
| | ICAC2 Multi-service Procedures for Integrating Airspace Command and Control in the Combat Zone |
| ATP-40 | Doctrine for Airspace Control in Times of Crisis and War |

220. LIVE/SIMULATOR EVENT TRAINING

1. Combat Capable Training

| STAGE | EVENTS | HOURS | PERCENT |
|---|---|---|---|
| ACA1 SCHOOL NATTC PENSACOLA | 1 | 580 | 60.0% |

2. Combat Ready Training

| STAGE | EVENTS | HOURS | PERCENT |
|---|---|---|---|
| FAMILIARIZATION | 2 | 6.0 | 0.6% |
| SYSTEM | 7 | 22.0 | 2.8% |
| SIMULATION | 2 | 4.0 | 0.8% |
| MMT | 2 | 14.0 | 0.9% |
| OPERATIONS | 6 | 152.0 | 3.5% |
| CHECK | 5 | 10.0 | 5.0% |
| QUALIFICATIONS | 2 | 14.0 | 1.4% |
| COMBAT READY TOTALS: | 26 | 222.0 | 15.0% |

3. Combat Qualification Training

| STAGE | EVENTS | HOURS | PERCENT |
|---|---|---|---|
| SIMULATION | 4 | 12.0 | 2.0% |
| OPERATIONS | 8 | 456.0 | 7.5% |
| CHECK | 3 | 6.0 | 9.5% |
| QUALIFICATIONS | 2 | 48.0 | 1.0% |
| COMBAT QUALIFICATION TOTALS: | 17 | 522.0 | 20.0% |

4. Full Combat Qualification Training

| STAGE | EVENTS | HOURS | PERCENT |
|---|---|---|---|
| OPERATIONS | 3 | N/A | 1.5% |
| DESIGNATION | 9 | 160.0 | 3.5% |
| FULL COMBAT QUALIFICATION TOTALS: | 12 | 160.0 | 5.0% |

5. Instructor Qualification Training

| STAGE | EVENTS | HOURS | PERCENT |
|---|---|---|---|
| QUAL | 2 | 264.0 | 0.0% |

## 230. LIVE/SIMULATOR EVENT PERFORMANCE REQUIREMENTS

1. General. The majority of the Enlisted Air Traffic Controller Syllabus is ground training which requires in-depth integration within the MACCS. Likewise, development of MAGTF training involving extensive integration with applicable elements of the MAGTF is mandatory in the development of a Fully Combat Qualified enlisted air traffic controller. Training not conducted in the live training environment shall be replaced with simulation where applicable as indicated in the condition code.

a. Live Training. Training event condition codes listed as **L** (live)in this syllabus designate training to be conducted without the aid of simulator devices.

b. Simulator Training. Training event condition codes listed as **S** (simulator), **L/S** (live preferred/simulator optional), and **S/L** (simulator preferred/live optional) in this syllabus designate training to be conducted in the simulator where applicable.

c. Reserve Training. Those portions of the syllabus which are required to be conducted by selected Marine Corps Reserve (SMCR) personnel will be indicated with a **Z** program of instruction code.

2. Minimum Performance Time for Syllabus "Write-Off"/Designations. Personnel may receive credit for successful completion of any syllabus requirement (except qualifications) upon either a written, oral, or practical demonstration of proficiency, at the commanding officer's discretion. Completion of 70% of any syllabus requirement (except qualifications) may be "written-off" as complete at the discretion of the designated evaluator. Qualifications require a completed performance evaluation, and the designation signed by the commanding officer.

3. Evaluation of Training. Evaluation of those portions of the syllabus which are academic in nature will be conducted by either written/oral examination or a combination of the two means. Operational and system related subjects will be evaluated by practical application means whenever possible. Performance evaluation to qualify for mission qualifications and designations will be conducted per T&R Manual, Administrative, and the standardized evaluation forms located in the Appendix C.

## 231. COMBAT CAPABLE TRAINING (7251)

1. Purpose. To develop basic knowledge of ATC rules, procedures and operations. Completion of this formal course of instruction, AC(A1) School at Naval Air Technical Training Center (NATTC) Pensacola, Florida is mandatory to satisfy this requirement. The 100-level (Combat Capable training) does not require refly. Upon completion of this portion of the training syllabus the individual is 60% trained in the MATC operations and is Combat Capable.

a. Prerequisite

- Appropriate Medical certificate.
- 18 years old upon completion of Course.
- GT 105.
- US Citizenship.

b. Academic Training: Formal school environment.

c. Classroom and Simulator Event Training (27 Events, 580 Hours)

FAM-100 34.0

Goal. Introduce weather as applied to ATC.

Requirement. Describe aviation weather to include:

(1) Basic weather characteristics.
(2) Weather hazards.
(3) Aviation weather observations.
(4) Aviation weather forecasts.
(5) Weather advisories.
(6) Weather observing programs.
(7) Aviation sequence reports.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. AC 00-6A, AC 00-45C, and NAVMETOCCOMINST 3141.2.

FAM-101 24.0

Goal. Introduce airspace, navigation, and time as applied in ATC.

Requirement. Describe the National Airspace System (NAS), time conversions, and basic navigation.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65, NAVAIR 00-80V-49, and Airman’s Information Manual (AIM).

FAM-102 3.0

Goal. Introduce Special Use Airspace (SUA) used by the military.

Requirement. Describe SUA and controller responsibilities within each.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65, and AIM.

FAM-103 23.0

Goal. Introduce NAVAIDS.

Requirement. Describe basic radio theory and NAVAIDS.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65, NAVAIR 00-80T-112, Navy Electricity and Electronics training Series (NEETS), Module 10, and AIM.

FAM-104 24.0

Goal. Introduce charts and publications used in ATC.

Requirement. Given aeronautical charts and publications, locate information and complete statements in accordance with the Flight Information Publications (FLIP) program.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. General Planning (GP) section of the Department of Defense (DOD) FLIP program.

FAM-105 8.0

Goal. Introduce communications as applied in ATC.

Requirement. Describe communication procedures used in ATC.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65 and AIM.

FAM-106 18.0

Goal. Introduce airport design and ATC equipment.

Requirement. Describe airport design and ATC equipment.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. Advisory Circular 150/5070-6A, NAVFAC P-80, NAVAIR 51-50AAA-2, NAVAIR 00-80T-114, NAVAIR 00-80R-14, and AIM.

FAM-107 24.0

Goal. Introduce general ATC procedures.

Requirement. Describe general ATC procedures to include:

(1) General Control.
(2) Weather information.
(3) Federal Aviation Regulation (FAR) Part 91.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65 and FAR Part 91.

FAM-108 32.0

Goal. Introduce ATC terminal procedures.

Requirement. Select statements that describe general ATC procedures used in a terminal environment.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65.

FAM-109 10.0

Goal. Introduce emergencies and special handling.

Requirement. Describe handling of emergency aircraft and special situations in a control tower environment.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65.

FAM-110 16.0

Goal. Introduce non-radar procedures.

Requirement. Describe general non-radar procedures as applied in ATC.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65.

FAM-111 16.0

Goal. Pass the Airmen’s Written Test (AWT).

Requirement. Conduct a thorough review of all information taught in FAM-100 through FAM-110.

Performance Standards. Pass the AWT with a minimum passing score of 70%.

Reference. FAR Part 65.

FAM-112 18.0

Goal. Control tower indoctrination.

Requirement. Describe the different operating positions in a control tower and their individual responsibilities.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65, Navy Millington Facility Manual, and NAVAIR 00-80T-114.

FAM-113 10.0

Goal. Introduce basic radar knowledge.

Requirement. Describe the different operating positions in a radar facility, define basic radar theory, and identify associated equipment.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. NAVAIR 00-80T-114.

FAM-114 26.0

Goal. Introduce basic radar services provided by ATC.

Requirement. Describe basic radar services and procedures used by ATC.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65.

FAM-115 14.0

Goal. Introduce Airport Surveillance Radar (ASR).

Requirement. Describe terms and procedures used by an ASR Final Controller.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65 and Navy Millington Facility Manual.

FAM-116 12.0

Goal. Introduce Precision Approach Radar (PAR).

Requirement. Describe terms and procedures used by a PAR Final Controller.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65 and Navy Millington Facility Manual.

FAM-117 22.0

Goal. Introduce arrival control.

Requirement. Describe terms and procedures used by an Arrival Controller.

Performance Standards. Pass a written test with a minimum passing score of 70%.

Reference. FAA 7110.65 and Navy Millington Facility Manual.

FAM-118 4.0

Goal. Introduce the Marine Air Traffic Control and Landing System (MATCALS).

Requirement. Describe the components and basic operation of the MATCALS, to include:

(1) AN/TPS-73 Air Traffic Control Subsystem (ATCS).
(2) AN/TPN-22 Automatic Landing System (ALS).
(3) AN/TSQ-131 Control and Communication Subsystem (CCS).

Performance Standards. Execute the following functions:

(1) Load FOC software into MMD via Magnetic Tape Unit (MTU).
(2) Load FOC software into MMD via Serial Data Bus (SDB).
(3) Set up an MMD for surveillance usage (ADC).
(4) Set up an MMD for a Final Controller (FC) Trainee.
(5) Set up a Final Control (FC) simulation scenario.
(6) Set up a Arrival Control (ADC) simulation scenario.

Reference. MATCALS Standard Operations Manual.

SYS-120 4.0

Goal. Introduce the CCS equipment.

Requirement. Identify and describe the equipment found in the CCS, to include:

(1) Processor Display Set (PDS).
(2) Cartridge Magnetic Tape Unit (CMTU).
(3) Line Printer.
(4) Wind indicator.
(5) TADIL-B modem.
(6) Digitizer Switching Set (DSS).
(7) Control and Distribution Set (CDS).
(8) Radios.
(9) Intercom.
(10) Telephones.
(11) TADIL-C.
(12) TADIL-B.

Performance Standards. The trainee will identify equipment listed above by visual sight with a minimum 70% accuracy rate.

Prerequisite. FAM-118.

Reference. MATCALS Standard Operations Manual.

SIM-130 32.0

Goal. Introduce basic tower operations.

Requirement. Observe and begin to apply basic tower operations in a Static Lab environment.

Performance Standards. Utilizing proper phraseology and tower procedures, the trainee will demonstrate the proficiency to progress to the Tower Operator Training System (TOTS).

Prerequisite. FAM-112.

SIM-131 76.0

Goal. Perform as a control tower operator.

Requirement. Using the 15G32 Tower Operator Training System (TOTS), perform as the following:

(1) Flight Data Operator in accordance with FAA 7110.65 and applicable instructions while observing all safety precautions.
(2) Ground Control Operator in accordance with FAA 7110.65 and applicable instructions while observing all safety precautions.
(3) Local Control Operator in accordance with FAA 7110.65 and applicable instructions while observing all safety precautions.

Performance Standards. Pass a performance test with a minimum passing score of 70% on each operating position.

Prerequisite. SIM-130.

SIM-132 34.0

Goal. Perform as an ASR Final Controller.

Requirement. Utilizing the 15G31 voice-recognition training device, perform the duties of an ASR Final Controller in accordance with FAA 7110.65 and applicable instructions while observing all safety precautions.

Performance Standards. Pass a performance test with a minimum passing score of 70%.

Prerequisite. FAM-115.

SIM-133 34.0

Goal. Perform as a PAR Final Controller.

Requirement. Utilizing the 15G31 voice-recognition training device, perform the duties of a PAR Final Controller in

accordance with FAA 7110.65 and applicable instructions while observing all safety precautions.

Performance Standards. Pass a performance test with a minimum passing score of 70%.

Prerequisite. FAM-116.

SIM-134 16.0

Goal. Identify and vector an aircraft.

Requirement. Utilizing the 15G31 voice-recognition training device, identify and vector an aircraft through a series of corridors.

Performance Standards. An aircraft shall be vectored from its initial position to the approach gate without touching the sides of the corridors or the airspace boundary.

Prerequisite. FAM-117.

SIM-135 37.0

Goal. Perform as an Arrival Controller.

Requirement. Utilizing the 15G31 voice-recognition training device, perform the duties of an Arrival Controller in accordance with FAA 7110.65 and applicable instructions while observing all safety precautions.

Performance Standards. Pass a performance test with a minimum passing score of 70%.

Prerequisite. FAM-117.

SIM-136 9.0

Goal. Perform as a MATCALS basic equipment operator.

Requirement. Perform the functions of a MATCALS basic equipment operator while operating in all modes of operation, while observing safety precautions to include:

(1) Arrival departure Control (ADC) Mode.
(2) Final Control (FC) Mode.
(3) Training Modes.

Performance Standards. Pass a performance test with a minimum passing score of 70%.

Prerequisite. SYS-120.

232. COMBAT READY TRAINING (7257/7253)

1. Purpose. To develop proficiency in ATC tower and radar operations. Upon completion of this portion of the training syllabus, the controller is 75% trained in MATC operations and is Combat Ready. Syllabus requirements are designated as Familiarization (FAM), System (SYS), Simulation (SIM), MATC Mobile Team (MMT), Operations (OPS), Check (CK), and Qualification (QUAL).

a. Prerequisite. Successfully complete the 100-level.

b. Academic Training. In addition to MAWTS ASP lessons located in Table 2-7, some events require the controller to be familiar with knowledge syllabus references located in Appendix B. All knowledge syllabus events must be covered in an oral or written exam. The minimum passing score is 80%.

c. Live and Simulator Event Training (26 Events, 222 Hours)

2. Familiarization Training (2 Events, 6 Hours)

FAM-200 2.0 Z L/S

Goal. Introduce two-way communications with MACCS agencies.

Requirement. In a classroom setting, field environment, or during a simulated exercise, using appropriate communications equipment: relay aircraft launch and recovery information as necessary, complete a communication transfer/handover of an aircraft to/from TAOC or DASC.

Performance Standards. The controller will establish a communication link with at least one receiving unit utilizing either voice or TADIL and complete the requirement.

Prerequisite. KFAM-205 and KFAM-301.

Reference. MCWP 3-25.3 and MCO 3501.9B.

FAM-201 4.0 Z L

Goal. Observe MACCS agencies in an exercise.

Requirement. In garrison or a field exercise, observe MACCS agencies and become familiar with major operating positions, communication links, and integration requirements.

Performance Standards. Identify the following with a minimum of a 70% accuracy rate.

(1) Major operating positions of the:
    (a) TACC.
    (b) TAOC.
    (c) DASC.
    (d) LAAD.
(2) Identify the types of communication available at the:
    (a) TACC.
    (b) TAOC.

(c) DASC.
(d) LAAD.

Prerequisite. Lectures A-02, B-07 through B-13, KFAM-205, KFAM-303, and KFAM-304.

Reference. MAWTS-1 ASP and MCO 3501.9B.

External Syllabus Support. MACCS agencies and associated equipment.

3. Systems Training (7 Events, 22 Hours)

SYS-220 2.0 Z L/S

Goal. Operate fixed control tower equipment.

Requirement. Properly utilize all equipment in a tower.

Performance Standards. Operate the following equipment:

(1) Transmitter/receiver control panel(s).
(2) Backup/emergency transmitter/receiver location and controls.
(3) Airfield lighting console/computer.
(4) Intercom units.
(5) Telephones.
(6) Altimeter.
(7) Aldis lamp.
(8) Wind instruments.
(9) Clocks.
(10) NAVAID monitors.
(11) Console and cab lighting.
(12) Cooling and heating controls.
(13) P. A. system.
(14) Emergency alert system.
(15) Fire extinguishers.
(16) Emergency power cutoff.
(17) Traffic tabulators.
(18) FDEP/FDIO.
(19) BRANDS/BRITE.
(20) Personal Computer.
(21) Weather reporting monitor.

Prerequisite. KTWR-210.

Reference. Local publications and MCO 3501.9B.

SYS-221 2.0 Z L/S

Goal. Operate fixed radar equipment.

Requirement. Properly utilize all equipment in a radar facility.

Performance Standards. Operate the following radar equipment:

(1) Search Radar.

(2) Precision Radar.
(3) Transmitter/receiver control panel(s).
(4) Backup/emergency transmitter/receiver location and controls.
(5) Intercom units.
(6) Telephones.
(7) Altimeter.
(8) Wind instruments.
(9) Clocks.
(10) NAVAID monitors.
(11) Console lighting.
(12) Cooling and heating controls.
(13) Emergency alert system.
(14) Fire extinguishers.
(15) Emergency power cutoff.
(16) FDEP/FDIO.
(17) Personal Computer.
(18) Weather reporting monitor.
(19) VISCOM.
(20) Simulator.

Prerequisite. KRDR-220.

Reference. Local publications and MCO 3501.9B.

SYS-222 2.0 Z L/S

Goal. Operate the Expeditionary Control Tower (AN/TSQ-120) and associated equipment.

Requirement. Properly utilize all equipment in the AN/TSQ-120.

Performance Standards. Locate and operate the following equipment:

(1) Power distribution panel.
(2) Internal and external lights.
(3) Aldis lamp.
(4) Overhead speakers and adjustment knobs.
(5) Flare gun assembly and firing switch.
(6) Digital clock.
(7) Thermostat.
(8) Convert barometric pressure reading to altimeter setting.
(9) Wind direction and speed indicator operation.
(10) TELCO (intercom/land line).
(11) VHF and UHF tunable radios.
(12) Radio selector buttons.
(13) Speaker selector switch.
(14) ATIS.
(15) Microphone and headset/handset jacks.
(16) Crash alarm.
(17) Fire detector.
(18) Operator Control Unit (OCU).

Prerequisite. KFAM-206.

Reference. Part II Expeditionary Control Tower Equipment Basic Course, Technical Manual EEE 119-MA-OMI-010/SA2257TSQ-120,and MCO 3501.9B.

SYS-223 2.0 Z L/S

Goal. Operate the Remote Landing Site Tower (AN/TSQ-216) and associated equipment.

Requirement. Properly utilize all equipment in the AN/TSQ-216.

Performance Standards. Locate and operate the following equipment:

(1) Power distribution panel.
(2) Internal and external lights.
(3) Aldis lamp (IR and visible light).
(4) Flare gun.
(5) Digital clock.
(6) Thermostat.
(7) Convert barometric pressure reading to altimeter setting.
(8) Wind direction and speed indicator operation.
(9) TELCO (intercom/land line).
(10) VHF, UHF and HF tunable radios.
(11) Radio selector buttons.
(12) Speaker selector switch.
(13) ATIS.
(14) Microphone and headset/handset jacks.
(15) Crash alarm.
(16) Fire detector.
(17) Operator’s Control Unit (OCU).
(18) Antenna construction.
(19) Generator.

Prerequisite. KFAM-206.

Reference. RLST TM.

SYS-224 2.0 Z L/S

Goal. Configure the Control and Communications (AN/TSQ-131) and associated equipment for basic operation.

Requirement. Properly utilize all equipment in the AN/TSQ-131.

Performance Standards. Execute the following functions:

(1) Operate the Operator Control Unit (OCU).
(2) Set up communications for a final approach.
(3) Program Multi-Mode Display (MMD) for elevation/azimuth.
(4) Load FOC software into MMD via Magnetic Tape Unit (MTU).
(5) Load FOC software into MMD via Serial Data Bus (SDB).
(6) Set up an MMD for surveillance usage (ADC).
(7) Set up an MMD for a Final Controller (FC) Trainee.
(8) Set up a Final Control (FC) simulation scenario.

(9) Establish and exit a TADIL-B circuit.
(10) Emergency circuit exit TADIL-B.
(11) Use of filters against TADIL-B.
(12) Build maps.

Prerequisite. KFAM-206, KDLC-263, and KDLC-264.

Reference. MATCALS Controller Handbook and MCO 3501.9B.

SYS-225 6.0 Z L

Goal. Operate communications equipment in secure mode and frequency agile mode (as applicable).

Requirement. In a garrison or field environment, communicate with other agencies using the secure mode of organic radios.

Performance Standards. Demonstrate use of the following:

(1) AN/GRC-171 (V) (Tower).
(2) AN/GRC-171 (V) (TADIL-C).
(3) AN/GRC-211.
(4) AN/URC-94 (V).
(5) AN/VRC-82.
(6) KG-84C.
(7) KY-58,99.
(8) KIR-1C.
(9) KY-75.
(10) KYK-13.
(11) KOI-18.
(12) ARC-210.
(13) CYZ-10.

Prerequisite. Lecture A-19 and KFAM-209.

Reference. MCI 25.25, MAWTS-1 ASP, and MCO 3501.9B.

SYS-226 6.0 Z L

Goal. Construct a field expedient antenna.

Requirement. Using necessary materials, construct a field expedient antenna for communication.

Performance Standards. Establish two-way communications using organic VHF/HF radios.

Reference. MCI 25.15, MCI 25.20, MCWP 6-22, and MCO 3501.9B.

External Syllabus Support. Field radio(s), antenna construction materials.

4. Simulation Training (2 Events, 4 Hours)

SIM-230 2.0 Z S

Goal. Control precision/surveillance approaches using the simulation mode of the AN/TSQ-131.

Requirement. Utilize the AN/TSQ-131 equipment under the supervision of an OJTI.

Performance Standards. Control 20 simulated approaches using the following RFC modes of the MATCALS:

(1) Simulated Mode-3 final approach.
(2) Simulated Mode-2 final approach.
(3) Simulated Mode-2 final using track update menu.
(4) Simulated Mode II, ACLS, TADIL-C.
(5) Simulated emergencies and unusual circumstances incorporated into all of the above simulations.

Prerequisite. SYS-224 and KFAM-206

Reference. MATCALS System Operation Manual, MATCALS Controller Handbook, and MCO 3501.9B.

SIM-231 2.0 Z S

Goal. Encode and decode messages.

Requirement. Given an ACEOI, encode and decode messages and exchange coded alpha or numeric characters, to authenticate radio communications.

Performance Standards. Perform proper authentication of radio communication.

Prerequisite. Lecture A-18 and KFAM-202.

Reference. MAWTS-1 ASP, AKVH 593, and MCO 3501.9B.

5. MATC Mobile Team Training (2 Events, 14 Hours)

MMT-260 6.0 Z L

Goal. Operate and use MMT radios and equipment.

Requirement. Demonstrate the use and operation of radios and equipment in both clear, secure, and frequency agile modes.

Performance Standards. Operate the following equipment:

(1) AN/PRC-119 FM.
(2) AN/PRC-104 HF.
(3) AN/PRC-113 UHF/VHF (AM).
(4) AN/PRC-117F.
(5) AN/PRC-138.
(6) CYZ-10.
(7) KY-99.
(8) AN/PVS-5/7 Night Vision Devices.

(9) VS-17 Marker Panels.
(10) ACR L-32RCL Field Marker Lights.
(11) AN/GRA-39.
(12) AN/TPN-30A Marine Remote Area Approach & Landing System (MRAALS).
(13) MEP-15 Generator.
(14) MEP-531.
(15) AN/PSN-11 Precision Lightweight Global Positioning System Receiver (PLGR).
(16) AN/PPN-19 Portable Radar Beacon.

Prerequisite. Lectures A-14, A-19, B-27, and KFAM-209.

Reference. MAWTS-1 ASP, MMT SOP, Developmental Bulletin 1-83, RLST TM, and MCO 3501.9B.

MMT-261 8.0 Z L

Goal. Perform as an MMT member.

Requirement. During an operation or training exercise, perform as an MMT member utilizing required equipment, while under the supervision of a qualified MMT Leader.

Performance Standards. Demonstrate the following:

(1) Equipment readiness.
(2) MMT and aircrew briefings.
(3) Site set up and tear down.
(4) Insertion and extraction.

Prerequisite. MMT-260, and KFAM-207.

Reference. MCI 25.30, MCI 25.32, AMCR 55-60, NWP 55-9 ASH, DB 1-83, and MCO 3501.9B.

External Syllabus Support. TLZ lighting and marking equipment.

6. Operations Training (6 Events, 152 Hours)

OPS-270 30.0 Z L

Goal. Perform the duties of a Tower Flight Data Controller.

Requirement. In a control tower, under direct supervision of an OJTI, perform the duties and responsibilities of a Tower Flight Data Controller.

Performance Standards. Demonstrate the proficiency required to be recommended for qualification as a Tower Flight Data controller.

Prerequisite. SYS-220, KFAM 200 through KFAM-204, KTWR-211, and all KTFD knowledge events.

Reference

NAVAIR 00-80T-114
- Ch 4 Naval Certification Procedures.
- Ch 6 General(Tower Operations).
- Ch 8 Training, Standardization, and Air Traffic Controller Performance Evaluations.
- Appendix G Air Traffic Control Specialist Mishap Statement.
- Appendix I Minimum Altitude Vectoring Chart.
- Appendix J Certification, Rating, and Quality Assurance Program.

Local publications and MCO 3501.9B.

OPS-271 30.0 Z L

Goal. Perform the duties of a Clearance Delivery Controller.

Requirement. While under direct supervision of an OJTI, perform the duties and responsibilities of Clearance Delivery Controller.

Performance Standards. Demonstrate the proficiency required to be recommended for qualification as a Clearance Delivery controller.

Prerequisite. SYS-220, KTWR-211, and TFD-241.

Reference

NAVAIR 00-80T-114
- Ch 4 Naval Certification Procedures.
- Ch 6 General (Tower Operations).
- Ch 8 Training, Standardization, and Air Traffic Controller Performance Evaluations.
- Appendix G ATC Specialist Mishap Statement.
- Appendix I Minimum Altitude Vectoring Chart.
- Appendix J Certification, Rating, and Quality Assurance Program.

Local publications and MCO 3501.9B.

OPS-272 30.0 Z L

Goal. Perform the duties of a Tower Ground Controller.

Requirement. In a control tower, under direct supervision of an OJTI, perform the duties and responsibilities of a Tower Ground Controller.

Performance Standards. Demonstrate the proficiency required to be recommended for qualification as a Tower Ground Controller.

Prerequisite. SYS-220, KFAM-200 through KFAM-204, and all KTGC knowledge events.

Reference

NAVAIR 00-80T-114
- Ch 4 Naval Certification Procedures.

Ch 6 General (Tower Operations).
Ch 8 Training, Standardization, and Air Traffic Controller Performance Evaluations.
Appendix G ATC Specialist Mishap Statement.
Appendix I Minimum Altitude Vectoring Chart.
Appendix J Certification, Rating, and Quality Assurance Program.
Local publications and MCO 3501.

OPS-273 30.0 Z L

Goal. Perform the duties of a Radar Flight Data Controller.

Requirement. In a radar environment, under direct supervision of an OJTI, perform the duties and responsibilities of a Radar Flight Data Controller.

Performance Standards. Demonstrate the proficiency required to be recommended for qualification as a Radar Flight Data Controller.

Prerequisite. SYS-221, KFAM-200 through KFAM-204, KRDR-303, and all KRFD knowledge events.

Reference

NAVAIR 00-80T-114
Ch 4 Naval Certification Procedures.
Ch 7 General (Radar Operations).
Ch 8 Training, Standardization, and Air Traffic Controller Performance Evaluations.
Appendix G ATC Specialist Mishap Statement.
Appendix I Minimum Altitude Vectoring Chart.
Appendix J Certification, Rating, and Quality Assurance Program.
Local publications and MCO 3501.9B.

OPS-274 30.0 Z L

Goal. Perform the duties of a Radar Final Controller.

Requirement. In a radar environment, under direct supervision of an OJTI, perform the duties and responsibilities of a Radar Final Controller.

Performance Standards. Demonstrate the proficiency required to be recommended for qualification as a Radar Final Controller.

Prerequisite. SYS-221, KFAM-200 through KFAM-204, and all KRFC knowledge events.

Reference

NAVAIR 00-80T-114
Ch 4 Naval Certification Procedures.
Ch 7 General (Radar Operations).

Ch 8 Training, Standardization, and Air Traffic Controller Performance Evaluations.
Appendix G ATC Specialist Mishap Statement.
Appendix I Minimum Altitude Vectoring Chart.
Appendix J Certification, Rating, and Quality Assurance Program.
Local publications and MCO 3501.9B.

OPS-275 2.0 Z L/S

Goal. Conduct launches and recoveries in EMCON conditions.

Requirement. In a garrison or field environment, conduct EMCON launches and recoveries.

Performance Standards. Demonstrate usage of the following:

(1) Prowords and brevity codes.
(2) Light gun signals.

Prerequisite. KTGC-243.

Reference. Joint Pub 1-02 and MCO 3501.9B.

7. Check Events (CK) (5 Events, 10 Hours)

CK-280 2.0 Z L E

Goal. Qualify as a Tower Flight Data Controller.

Requirement. In a garrison or field environment, under direct supervision and in compliance with established NATOPS evaluation criteria, apply knowledge and conduct ATC procedures in a safe, orderly, and expeditious manner at the Tower Flight Data position.

Performance Standards. Pass an OJT examination demonstrating knowledge and proficiency while performing the following as a Tower Flight Data Controller (as applicable):

(1) Receive and relay aircraft movement data.
(2) Operate associated communications equipment.
(3) Prepare and post flight progress strips.
(4) Operate ATIS equipment.
(5) Operate FDEP/FDIO equipment.
(6) Monitor NAVAID alarm systems.
(7) Obtain, post, and relay ATC clearances and advisories.
(8) Other duties as assigned by the Tower Watch Supervisor.
(9) Other duties as outlined in local Facility Manual.

Prerequisite. OPS-270.

Reference. NAVAIR 00-80T-114, local publications, and MCO 3501.9B.

CK-281 2.0 Z L E

Goal. Qualify as a Clearance Delivery Controller.

Requirement. In a garrison or field environment, under direct supervision and in compliance with established NATOPS evaluation criteria, apply knowledge and conduct ATC procedures in a safe, orderly, and expeditious manner on the Clearance Delivery position.

Performance Standards. Pass an OJT examination demonstrating knowledge and proficiency while performing the following as a Clearance Delivery Controller (as applicable):

(1) Receive and relay aircraft movement data.
(2) Operate associated communications equipment.
(3) Prepare and post flight progress strips.
(4) Operate FDEP/FDIO equipment.
(5) Obtain, post, and relay ATC clearances and advisories.
(6) Other duties as assigned by the Tower or Radar Watch Supervisor.
(7) Other duties as outlined in local Facility Manual.

Prerequisite. OPS-271.

Reference. NAVAIR 00-80T-114, Facility Manual, and MCO 3501.9B.

CK-282 2.0 Z L E

Goal. Qualify as a Tower Ground Controller.

Requirement. In a garrison or field environment, under direct supervision and in compliance with established NATOPS evaluation criteria, apply knowledge and conduct ATC procedures in a safe, orderly, and expeditious manner at the Tower Ground Control position.

Performance Standards. Pass an OJT examination demonstrating knowledge and proficiency while performing the following as a Tower Ground Controller (as applicable):

(1) Formulate and issue ground movement clearances to aircraft and vehicles operating on the airfield.
(2) Transmit current weather and field conditions, as required.
(3) Other duties as assigned by the Tower Watch Supervisor.
(4) Other duties as outlined in local Facility Manual.

Prerequisite. OPS-272.

Reference. NAVAIR 00-80T-114, Facility Manual, and MCO 3501.9B.

CK-283 2.0 Z L E

Goal. Qualify as a Radar Flight Data Controller.

Requirement. In a garrison or field environment, under direct supervision and in compliance with established NATOPS evaluation criteria, apply knowledge and conduct ATC procedures in a safe, orderly, and expeditious manner on the Radar Flight Data position.

Performance Standards. Pass an OJT examination demonstrating knowledge and proficiency while performing the following as a Radar Flight Data Controller (as applicable):

(1) Operating communications equipment associated with the Radar Flight Data position.
(2) Receive and relay aircraft movement data.
(3) Prepare and post flight progress strips.
(4) Operate ATIS equipment.
(5) Operate FDEP/FDIO equipment.
(6) Monitor NAVAID alarm systems.
(7) Obtain, post, and relay ATC clearances and advisories.
(8) Other duties as assigned by the Radar Watch Supervisor.
(9) Other duties as outlined in local Facility Manual.

Prerequisite. OPS-273.

Reference. NAVAIR 00-80T-114, Facility Manual, and MCO 3501.9B.

CK-284 2.0 Z L E

Goal. Qualify as a Radar Final Controller.

Requirement. In a garrison or field environment, under direct supervision and in compliance with established NATOPS evaluation criteria, apply knowledge and conduct ATC procedures in a safe, orderly, and expeditious manner on the Radar Final Controller position.

Performance Standards. Pass an OJT examination demonstrating knowledge and proficiency while performing as a Radar Final Controller (as applicable):

(1) Provide instructions necessary for an aircraft to conduct an ASR/PAR/PALS approach.
(2) When required, monitor approaches as specified in FAA 7110.65.
(3) Other duties as assigned by the Radar Watch Supervisor.
(4) Other duties as outlined in local Facility Manual.

Prerequisite. OPS-274.

Reference. FAA 7110.65, NAVAIR 00-80T-114, Facility Manual, and MCO 3501.9B.

8. Qualification Training (2 Events, 14 Hours)

QUAL-290 8.0 Z L E

Goal. Qualify as an MMT member.

Requirement. During an operation or a field exercise, demonstrate proficiency as an MMT member.

Performance Standards. Perform the following to include delegated duties in:

(1) Planning.
(2) Personnel and equipment readiness.
(3) MMT and aircrew briefing.
(4) Site set up and tear down.
(5) Insertion and extraction.

Prerequisite. MMT-260, MMT-261, CK-280, CK-282 or CK-283, and CK-284.

Reference. AFI 13-217 and MCO 3501.9B.

QUAL-291 6.0 Z L/S E

Goal. Qualify as a Data Link Coordinator in compliance with established evaluation criteria.

Requirement. During an operation or a training exercise, establish, operate, and exit MATCALS TADIL-B and -C links.

Performance Standards

(1) Track Management.
(2) Emergency circuit exit TADIL-B.
(3) Mode II, ACLS, TADIL-C.

Prerequisite. KDLC-263, KDLC-264, and SYS-224.

Reference. JCS PUB 10, IDS AND IDH, JCS PUB 12, VOL IV, PARTS 1-4, OPNAVINST C3510.14, JTAO Procedural Handbook, C3 Information Flow Model Analysis, MCO 3501.9B, TM 2000 Series, and CMS-1.

External Syllabus Support. Operational TACC and/or TAOC equipment (TADIL-B) NAWCAD MTT.

## 233. COMBAT QUALIFICATION TRAINING (7252/7254)

1. Purpose. To develop advanced proficiency in ATC tower and radar operations. Upon completion of this portion of the training syllabus, the controller is 95% trained in ATC tower and radar operations and is Combat Qualified. Syllabus requirements are designated as Simulation (SIM), Operations (OPS), Check (CK), and Qualification (QUAL).

a. Prerequisite. Complete the 200-level of this syllabus.

b. Academic Training. In addition to MAWTS ASP lessons located in table 2-7, some events require the controller to be familiar with knowledge syllabus references located in Appendix B. All knowledge syllabus events must be covered by an oral or written test. Minimum passing score is 80%.

c. Live and Simulator Event Training (17 Events, 522 Hours)

2. Simulation Training (4 Events, 12 Hours)

SIM-330 2.0 Z S

Goal. Conduct ATC operations in a Nuclear, Biological, and Chemical (NBC) environment.

Requirement. In a simulated NBC environment utilizing ATC detachment equipment and in MOPP level IV, perform air traffic control functions.

Performance Standards. While in MOPP IV, provide for the safe, orderly, and expeditious movement of air traffic, in either a radar or tower environment.

Reference. MCWP 3-37, MCWP 3-37A, MCWP 3-37.5, MCI 57.6, and MCO 3501.9B.

External Syllabus Support. Voice amplifier.

SIM-331 2.0 Z S

Goal. Control in an Arrival/Departure Control (ADC) environment using the simulation mode of the AN/TSQ-131.

Requirement. Utilizing the AN/TSQ-131 equipment under the supervision of an OJTI perform the functions of an ADC.

Performance Standards. Must successfully conduct a simulated Arrival scenario of five A/C simultaneously, incorporating inter/intra facility handoffs, point-outs, approval requests, and approved strip marking.

Prerequisite. SYS 224.

Reference. MATCALS System Operation Manual, MATCALS Controller Handbook, and MCO 3501.9B.

SIM-332 2.0 S

Goal. Perform non-radar approach control services.

Requirement. In a non-radar environment, under the supervision of an OJTI, perform the duties and responsibilities of a non-radar Approach Controller.

Performance Standards. Must successfully conduct a simulated non-radar scenario of five A/C simultaneously, incorporating inter/intra facility handoffs, point-outs, approval requests, and approved strip marking.

Prerequisite. KAPC-352.

Reference

FAA 7110.65
Ch 6 Non-radar.
NAVAIR 00-80T-114
Ch 4 Naval Certification Procedures.
Ch 6 General (Tower Operations).
Ch 8 Training, Standardization, and ATC Performance Evaluations.
Appendix G ATC Specialist Mishap Statement.
Appendix I Minimum Alt Vectoring Chart.
Appendix J Certification, Rating, and Quality Assurance Program.
Local publications and MCO 3501.9B.

SIM-333 6.0 Z S/L

Goal. Plan and develop MATCD communications interface with MACCS and external agencies.

Requirement. During simulation or actual operation, plan, develop, and implement the communications architecture for MATCD interface with the MACCS and external agencies by using an ACEOI, and Annex K of an operations order (Op Order).

Performance Standards

(1) Identify and submit communications requirements.
(2) Provide a communications connectivity chart.

Prerequisite. FAM-200 and Lecture B-26.

Reference. MAWTS-1 ASP and MCO 3501.9B.

3. Operations Training (8 Events, 456 Hours)

OPS-370 160.0 Z L

Goal. Perform the duties of a Tower Local Controller.

Requirement. In a control tower, under the supervision of an OJTI, perform the duties and responsibilities of a Tower Local Controller.

Performance Standards. Demonstrate the proficiency required to be recommended for qualification as a Tower Local Controller.

Prerequisite. KTWR-310 through KTWR-316, and all KTLC knowledge events.

Reference

NAVAIR 00-80T-114
Ch 4 Naval Certification Procedures.
Ch 6 General (Tower Operations).
Ch 8 Training, Standardization, and Air Traffic Controller Performance Evaluations.

Appendix G ATC Specialist Mishap Statement.
Appendix I Minimum Altitude Vectoring Chart.
Appendix J Certification, Rating, and Quality Assurance Program.
Local publications and MCO 3501.9B.

OPS-371 120.0 Z L

Goal. Perform the duties of an Arrival/Departure (RATCF) Controller

Requirement. In a radar environment, under direct supervision of an OJTI, perform the duties and responsibilities of an Arrival/Departure Controller.

Performance Standards. Demonstrate the proficiency required to be recommended for qualification as an Arrival/Departure Controller.

Prerequisite. KRDR-320 through KRDR-325, all KAPC knowledge events.

Reference

NAVAIR 00-80T-114
Ch 4 Naval Certification Procedures.
Ch 7 General (Radar Operations).
Ch 8 Training, Standardization, and Air Traffic Controller Performance Evaluations.
Appendix G ATC Specialist Mishap Statement.
Appendix I Minimum Altitude Vectoring Chart.
Appendix J Certification, Rating, and Quality Assurance Program.
Local publications and MCO 3501.9B.

OPS-372 120.0 Z L

Goal. Perform the duties of an Approach Controller.

Requirement. In a radar environment, under direct supervision of a OJTI, perform the duties and responsibilities of a Approach Controller.

Performance Standards. Perform the duties and responsibilities of an Approach Controller under direct supervision.

Prerequisite. KRDR-320 through KRDR-325, and all KAPC knowledge events.

Reference

NAVAIR 00-80T-114
Chapter 4 Naval Certification Procedures.
Chapter 7 General (Radar Operations).
Chapter 8 Training, Standardization, and Air Traffic Controller Performance Evaluations.
Appendix G ATC Specialist Mishap Statement.

Appendix I Minimum Altitude Vectoring Chart.

Appendix J Certification, Rating, and Quality Assurance Program

Local publications and MCO 3501.9B.

OPS-373 8.0 Z L

Goal. Perform as an MMT Leader.

Requirement. During an operation or training exercise while utilizing required equipment and under the supervision of a qualified MMT Leader, perform as an MMT Leader.

Performance Standards

(1) Recommend/assist in TLZ/HLZ site selection and survey.
(2) Coordinate with civil and military control agencies.
(3) Prepare personnel and equipment readiness.
(4) Conduct MMT and aircrew briefings.
(5) Insertion and extraction methods.
(6) Mark TLZ/HLZs.

Prerequisite. CK-370, MMT-261, KFAM-208, KFAM-300, KFAM-301, KFAM-400, and KFAM-402.

Reference. MCI 25.30, MCI 25.32, AMCR 55-60, MCO 3501.9B, and MMT SOP.

OPS-374 4.0 Z L/S

Goal. Conduct an ATC tactical crew brief.

Requirement. During an operation, a training exercise or through simulation, properly conduct an ATC tactical crew brief.

Performance Standards. Brief the following areas:

(1) Enemy and friendly situation.
(2) Air defense warning condition.
(3) Air defense alert state.
(4) Air defense weapons release condition.
(5) Continuing missions.
(6) Scheduled events.
(7) Published air tasking order (ATO).
(8) Assigned frequencies/call signs.
(9) Weather.
(10) Equipment status.
(11) Crew requirements.
(12) Emergency procedures.

Prerequisite. KFAM-205, FAM-200, CK-372, CK-373, Lectures A-12, A-13, and B-1 through B-13.

Reference. MCWP 3-25.8, MAWTS-1 Tactical Planning Guide, NAVAIR 00-80T-114, and MCO 3501.9B.

OPS-375 2.0 Z L/S

Goal. Extract pertinent information from the ATO and ACO.

Requirement. During an operation or a training exercise, extract pertinent information and aircraft operating constraints from the ATO/SPINS and ACO.

Performance Standards. Develop a flight schedule utilizing the information found in the ATO/SPINS and ACO.

Prerequisite. Lecture A-09 and KFAM-400.

Reference. MAWTS-1 ASP, Joint Pub 3-56.1, ATO Manual, and MCO 3501.9B.

OPS-376 40.0 Z L

Goal. Prepare, request, and supervise an FAA flight inspection/ certification.

Requirement. During an operation, a field exercise, or while in garrison, conduct a tactical or FAA flight inspection.

Performance Standards

(1) Request tactical or FAA flight inspection from the appropriate agency.
(2) Prepare for NAVAID/RADAR certification.
(3) Submit for approval applicable instrument flight procedures for a NAVAID/RADAR.
(4) Prepare tactical flight check profiles associated with permissive and restrictive environments.

Reference. OPNAVINST 3722.16, NAVAIR 16-1-520, NAVAIR 00-80T-114, NAVAIR 00-80T-115, and FAA OAP 8200.1 U.S.

OPS-377 2.0 Z L/S

Goal. Identify and plot air control measures on a map.

Requirement. During an operation or a training/simulated exercise, identify, describe, and plot the designated air control measures.

Performance Standards. Plot the following items on a map:

(1) Base Defense Zones (BDZ).
(2) Minimum Risk Routes (MRR).
(3) High Density Airspace Control Zone (HIDACZ).
(4) Standard Use Army Aircraft Flight Routes (SAFFR).
(5) Low Level Transit Routes (LLTR).
(6) Amphibious Objective Area (AOA).
(7) Airspace Coordination Area (ACA).
(8) Multi-Use Control Points.

Prerequisite. Lecture B-18.

Reference. MAWTS-1 ASP, and MCO 3501.9B.

4. Check Event (CK) (3 Events, 6 Hours)

CK-380 2.0 Z L E

Goal. Qualify as a Tower Local Controller.

Requirement. In a garrison or field environment, under direct supervision of a CTO Examiner and in compliance with established NATOPS evaluation criteria; apply knowledge and conduct ATC procedures in a safe, orderly, and expeditious manner at the Tower Local Control position.

Performance Standards. Pass an OJT examination demonstrating knowledge and proficiency while performing the following as a Tower Local Controller:

(1) Formulate and issue clearances and control instructions to accomplish separation between aircraft and between aircraft and vehicles operating under the jurisdiction of the tower.
(2) Effect coordination with appropriate operator positions and other facilities.
(3) Provide flight assistance service to aircraft.
(4) Operate airport lighting, lighting systems, and visual landing aids.
(5) Initial notification and dispatch of emergency personnel and equipment for aircraft emergencies and accidents.
(6) Other duties as assigned by the Tower Watch Supervisor.
(7) Other duties as outlined in local Facility Manual.

Prerequisite. OPS-370, and 6 months as a controller at one location (per FAR Part 65.39).

Reference. NAVAIR 00-80T-114, local publications, and MCO 3501.9B.

CK-381 2.0 Z L E

Goal. Qualify as an Arrival/Departure (RATCF) Controller.

Requirement. In a garrison environment, under direct supervision of an ATCSE and in compliance with established NATOPS evaluation criteria; apply knowledge and conduct ATC procedures in a safe, orderly, and expeditious manner at the Arrival/Departure Control position. This qualification is only given at locations without an Approach Control.

Performance Standards. Pass an OJT examination demonstrating knowledge and proficiency while performing the following as an Arrival/Departure Controller:

(1) Maintain radar surveillance of assigned areas and provide radar services to aircraft as required.

(2) Issue clearances and control instructions to aircraft operating under arrival control jurisdiction.
(3) Issue clearances and advisory information to aircraft under departure control jurisdiction.
(4) Initiate/accept radar hand-offs from adjacent sectors/facilities.
(5) On arrival, accept radar handoffs from approach control and provide radar services to aircraft as required until the aircraft reaches approach minimums or is handed off to a final controller or adjacent facility.
(6) Provide assistance and priority of services to aircraft in emergency situations.
(7) Other duties as assigned by the Radar Watch Supervisor.
(8) Other duties as outlined in the local Facility Manual.

Prerequisite. OPS-371.

Reference. NAVAIR 00-80T-114, local publications, and MCO 3501.9B.

CK-382 2.0 Z L E

Goal. Qualify as an Approach Controller.

Requirement. In a garrison or field environment, under direct supervision of a ATCS Examiner and in compliance with established NATOPS evaluation criteria; apply knowledge and conduct ATC procedures in a safe, orderly, and expeditious manner at the Approach Control position.

Performance Standards. Pass an OJT examination demonstrating knowledge and proficiency to perform the following as an Approach Controller:

(1) Issue ATC clearances and advisory information to aircraft under approach control jurisdiction.
(2) Maintain radar surveillance of assigned areas and provide radar service to aircraft as required.
(3) Determine the separation and sequence to be used between aircraft.
(4) Initiate/accept radar hand-offs from adjacent sectors/facilities.
(5) Provide assistance and priority of services to aircraft in emergency situations.
(6) Utilize any or all other operating positions as necessary.
(7) Other duties as assigned by the Radar Watch Supervisor.
(8) Other duties as outlined in the local Facility Manual.

Prerequisite. OPS-372.

Reference. NAVAIR 00-80T-114, local publications, and MCO 3501.9B.

5. Qualifications Training (QUAL) (2 Events, 48 Hours)

QUAL-390 40.0 Z L E

Goal. Be designated an On The Job Training Instructor (OJTI).

Requirement. In a garrison or field environment, provide OJTI instruction to student controllers.

Performance Standards. Demonstrate proficiency in the following:

(1) Preferred methods of teaching through a combination of direction, demonstration, and practical application.
(2) Documentation of training on the Air Traffic Controller Position Evaluation
(3) Communicating to a trainee an evaluation of their performance to include their overall performance, an identification of strengths and weaknesses, and specific recommendations for improvement.

Prerequisite. Applicable NATOPS CK.

Reference. FAA Facility OJTI Course and local publications.

QUAL-391 8.0 Z L E

Goal. Qualify as an MMT Leader in a field exercise.

Requirement. During an operation or field exercise, with a qualified MMT Leader Instructor, qualify as an MMT Leader.

Performance Standards. Demonstrate proficiency in the following:

(1) Site selection.
(2) Personnel and equipment readiness.
(3) MMT and aircrew briefings.
(4) Insertion and extraction.
(5) Mark TLZ/HLZs.

Prerequisite. CK-380, KFAM-208, KFAM-305, and KFAM-406.

Reference. MCI 25.30, MCI 25.32, AFI 13-217, and MCO 3501.9B.

## 234. FULL COMBAT QUALIFICATION TRAINING (7252/7254/7291)

1. Purpose. To develop advanced proficiency in ATC tower and radar operations. Upon completion of this portion of the training syllabus, the individual is 100% trained in ATC operations and is Full Combat Qualified. Syllabus requirements are designated as Operations (OPS), and Designations (DESG).

a. Prerequisite. Complete the 300-level of this syllabus.

b. Academic Training. In addition to MAWTS ASP lessons located in table 2-9, some events require the controller to be familiar with knowledge syllabus references located in Appendix B. All knowledge syllabus events must be passed with an 80% on a oral or written test.

c. Live and Simulator Event Training (12 Events, 168 Hours)

2. Operations Training (3 Events, 8 Hours)

OPS-470 8.0 Z L/S

Goal. Develop an embarkation plan for the MATCD.

Requirement. Given a mission statement, develop a plan for fixed wing air and amphibious embarkation for the ATC Detachment.

Performance Standards. Perform embarkation to include:

(1) Basics of unit movement by military aircraft.
(2) Plan an air movement.
(3) Preparation of vehicles and supplies.
(4) Computation of center of balance for vehicles and cargo.
(5) Execution of an air movement.
(6) Embarkation of personnel.
(7) Embarkation of organizations.
(8) Preparation of supplies and equipment to include hazardous material, weapons, and ammunition.
(9) Amphibious ships characteristics and loading methods.
(10) Embarkation and debarkation procedures.
(11) Time Phased Force Deployment Data (TPFDD).

Reference. MCI 04.7, MCI 04.11, MATCALS SOM, applicable embarkation directives, and MCO 3501.9B.

OPS-471 NA Z L

Goal. Perform as a MATCD NCOIC.

Requirement

(1) Assist and make recommendations to the detachment commander concerning all aspects of the detachment.
(2) Provide input to the detachment commander with regard to the management of personnel.
(3) Coordinate assignment and supervision of enlisted Marines to include FAP requirements.
(4) Supervise the professional development of enlisted Marines.
(5) Coordinate with internal and external agencies as required.
(6) Coordinate and supervise the administrative functions of the detachment including tracking and reporting the CRP status of unit controllers.
(7) Assist the detachment commander in preparing the following:
    (a) Deployment plans and orders.
    (b) Embarkation planning.
    (c) TERPS for deployment locations.
    (d) Recommendations for airspace requirements for deployments.
    (e) Universal Needs Statement (UNS).

(f) Submission of Military Training Requirement Review (MTRR).

Performance Standards. Perform at least 80% of the requirements and be permanently assigned as a MATCD NCOIC.

Prerequisite. CK-372, CK-373, KFAM-401 through KFAM-404, and KFAM-500.

OPS-472 NA L

Goal. Perform as a MACS Operations Chief (Ops Chief).

Requirement

(1) Provide assistance and make recommendations to the operations officer concerning all aspects of the operational employment of the squadron, both in garrison and while deployed to include:
   (a) TEEP preparation.
   (b) SORTS review.
   (c) Intelligence requirements.
(2) Supervise the administration of the S-3 section.
(3) Direct the preparation, editing, routing and maintenance of all correspondence and reports required.
(4) Assist in the preparation of squadron operations plans, orders and training schedules.
(5) Advise the operations officer on assignment of all enlisted personnel.
(6) Provide guidance and assist the ATC Chief, Training Chief, Intelligence Chief, ATC NCOIC, and NBC Chief.
(7) Supervise the professional development of enlisted Marines assigned.
(8) Coordinate all squadron operational, training, and inspection requirements with higher headquarters.
(9) Other duties as assigned by the operations officer.

Performance Standards. Perform at least 80% of the requirements and be assigned to a MACS as an Ops Chief.

Prerequisite. CK-372, CK-373, KFAM-302, KFAM-400 through KFAM-404, and KFAM-500.

3. Designation Training (DESG) (9 Events, 160 Hours)

DESG-490 80.0 Z L

Goal. Be designated as a Tower Watch Supervisor.

Requirement. During an operation or a field exercise, under direct supervision of a qualified evaluator, perform the duties and responsibilities of a Tower Watch Supervisor.

Performance Standards

(1) Coordinate and direct the control of aircraft operating in assigned airspace areas and air and surface vehicular

traffic operating on runways, taxiways, and other designated areas of the airfield.
(2) Brief the control tower crew on weather conditions, traffic, equipment status, field conditions, and special evolutions prior to assuming the watch.
(3) Assign personnel to operating positions according to individual qualifications and training requirements.
(4) Assign trainees to qualified controllers for supervision.
(5) Notify cognizant SAR agencies of aircraft in distress.
(6) Advise the ATCFO concerning the maintenance of current facility directives and other pertinent regulations pertaining to the control tower.
(7) Maintain tower equipment including the recording of outages and action taken to correct discrepancies.
(8) Maintain operational continuity of the watch.
(9) Qualify personnel on individual operating positions and recommend certification in conformance with this manual and local requirements.
(10) Ensure that controller currency requirements are met.
(11) Evaluate the operational readiness of branch equipment.
(12) Provide technical assistance to the ATCFWO in the execution of control tower operations procedures to include:
(a) Crew management.
(b) Control judgment.
(c) Traffic management.
(d) Operating procedures and methods.
(e) Coordination and communication.
(f) Equipment operation.
(g) Information flow.
(h) External agency interface.
(i) Logs and records.
(j) Phraseology.

Prerequisite. CK-380.

Reference. FAA 7110.65, NAVAIR 00-80T-114, local publications, and MCO 3501.9B.

DESG-491 N/A L

Goal. Be designated as a Control Tower Chief.

Requirement. In a control tower, perform the duties of a Control Tower Chief.

Performance Standards

(1) Maintain a current facility directives library and other pertinent regulations pertaining to control tower operations.
(2) Maintain tower equipment, ensure completion of equipment checklist, and record of outages/returns to service with action taken to correct discrepancies.

(3) Review the branch log daily and maintain operational continuity between watch teams. Ensure completion of position relief checklists by tower controllers.
(4) Qualify controllers on operating positions and recommend personnel for supervisory positions in conformance with NAVAIR 00-80T-114 and local requirements.
(5) Ensure currency of controllers.
(6) Provide technical assistance to the ATCFO in development of procedures.

Prerequisite. CK-380.

Reference. NAVAIR 00-80T-114 and local publications.

DESG-492 N/A L

Goal. Be designated as a CTO Examiner (CTOE).

Requirement. Perform the duties of a CTOE when assigned in writing by the appropriate commander and approved by the FAA.

Performance Standards. Execute all CTOE duties as detailed in FAA 7220.1, FAR Part 65, and NAVAIR 00-80T-114, to include:

(1) Administer all required exams for qualification/ certification and issuance of CTO ratings and certificates.
(2) Grade and document all exam results.
(3) Ensure appropriate entries are made in the individual MACCS Performance Record/SRB as required.
(4) Complete all required qualification/certification documentation and submit the appropriate forms to the FAA for issuance of the permanent CTO certificate.
(5) Prepare and issue qualification certificates as required.
(6) Maintain written records of all CTO ratings issued while serving in the capacity of a CTOE.
(7) Suspend CTO ratings as necessary.

Prerequisite. Current or previous completion of all events equating to CTO ratings commensurate with those of the current facility.

Reference. ATC Facility Manual, AOM, FAA 7220.1 & 7110.65, NAVAIR 00-80T-114, and MCO 3501.9B.

DESG-493 80.0 L

Goal. Be designated as a Radar Watch Supervisor.

Requirement. Perform the duties and responsibilities of a Radar Watch Supervisor.

Performance Standards

(1) Coordinate and direct the control of aircraft within assigned airspace.
(2) Brief the radar crew on weather conditions, traffic, equipment status, field conditions, and special evolutions prior to assuming the watch.
(3) Assign personnel to operating positions according to individual qualifications and training requirements.
(4) Assign trainees to qualified controllers for supervision.
(5) Ensure the currency of controllers.
(6) Evaluate the operational readiness of equipment.
(7) Supervise FAA/military flight checks.
(8) Maintain a current library of facility directives and other pertinent regulations pertaining to radar operations.
(9) Maintain radar equipment including the recording of outages and action taken to correct discrepancies.
(10) Maintain operational continuity of the watch.
(11) Qualify personnel on individual operating positions and recommend certification in compliance with this manual and local requirements.
(12) Provide technical assistance to the ATCFWO in the execution of radar control procedures to include:
(a) Crew management.
(b) Control judgment.
(c) Traffic management.
(d) Operating procedures and methods.
(e) Coordination and communication.
(f) Equipment operation.
(g) Information flow.
(h) External agency interface.
(i) Logs and records.
(j) Phraseology.

Prerequisite. CK-381 or CK-382.

Reference. FAA 7110.65, NAVAIR 00-80T-114, local publications, and MCO 3501.9B.

DESG-494 N/A L

Goal. Be designated as a Radar Chief.

Requirement. Perform the duties and responsibilities of a Radar Chief.

Performance Standards

(1) Maintain a current library of facility directives and other pertinent regulations pertaining to radar operations.
(2) Maintain radar equipment.
(3) Ensure completion of equipment checklist and record outages/returns to service with corrective action.

(4) Review the branch log daily and maintain operational continuity between watch teams.
(5) Ensure completion of position relief checklists by tower controllers.
(6) Qualify personnel on individual operating positions and recommend personnel for supervisory positions in conformance with the NAVAIR 00-80T-114 and local requirements.
(7) Ensure currency of controllers.
(8) Evaluate and inform the ATCFO about operational readiness of branch equipment.
(9) Supervise FAA/military flight checks.
(10) Provide technical assistance to the ATCFO in development of procedures.

Prerequisite. CK-381 or CK-382.

Reference. NAVAIR 00-80T-114.

DESG-495 N/A L

Goal. Perform as an ATC Specialist Examiner (ATCSE).

Requirement. Perform the duties of an ATCSE when assigned in writing by the appropriate commander.

Performance Standards. Execute all ATCSE duties as detailed in FAA 7220.1, FAR Part 65, and NAVAIR 00-80T-114, to include:

(1) Administer all required exams for qualification/certification of ATCS ratings.
(2) Grade and document all exam results.
(3) Ensure appropriate entries are made in the individual MACCS Performance Record as required.
(4) Administer operational performance examinations for ATC specialist ratings and recommend issuance of applicable ratings to the ATCFO/MATCD commander.
(5) Complete all required qualification/certification documentation.
(6) Prepare and issue qualification certificates as required.
(7) Maintain written records of all ATC specialist ratings issued while serving in the capacity of an ATCSE.

Prerequisite. Current or previous completion of all events equating to ATCS ratings commensurate with those of the current facility.

Reference. ATC Facility Manual, Airfield Operations Manual, FAA 7220.1 & 7110.65, NAVAIR 00-80T-114, and MCO 3501.9B.

DESG-496 N/A Z L

Goal. Perform as a Facility Watch Officer (FWO)/MATCD Watch Commander (WC).

Requirement. During an operation or a field exercise, perform the duties and responsibilities of a FWO/WC.

Performance Standards. Demonstrate proficiency in the following:

(1) Crew management.
(2) MACCS information flow if required.
(3) Interface with external MACCS agencies as required.
(4) Control judgment.
(5) Traffic management.
(6) Operating procedures and method.
(7) Coordination and communication.
(8) Phraseology.
(9) Equipment.

Prerequisite. Qualification as an FWO/MATCD WC is determined by the ATCFO or MATCD commander.

Reference. FAA 7110.65, FAA 7110.10, NAVAIR 00-80T-114, NAVAIR 00-80T-115, local publications, and MCO 3501.9B.

DESG-497 N/A L

Goal. Perform the duties of a Training and Standardization Supervisor (TSS).

Requirement. While assigned to an ATC facility, perform TSS duties.

Performance Standards

(1) Establish and maintain an OJT program for controllers.
(2) Conduct classroom training on local area ATC equipment and procedure as required.
(3) Develop local course material, visual aids, and training scenarios to supplement other published material such as FAA refresher series.
(4) Coordinate with tower and radar chiefs in preparation of monthly training schedule.
(5) Prepare tests to evaluate results of scheduled training.
(6) Prepare an indoctrination program for newly assigned controllers.
(7) Maintain ATC certification/qualification records.
(8) Ensure effectiveness and currency of facility directives and technical libraries.

Prerequisite. All ATCS ratings at the assigned facility and a minimum of 5 years ATC experience.

Reference. NAVAIR 00-80T-114.

DESG-498 N/A Z L

Goal. Be designated Terminal Instrument Procedures (TERPS) Specialist.

Requirement. While at a MCAS or MATCD, manage and upkeep a TERPS Program.

Performance Standards

(1) Review all current terminal instrument procedures.
(2) Develop new procedures as required.
(3) Maintain and file obstacle evaluations.
(4) Perform and submit required reviews.

Prerequisite. Terminal Instrument Procedures Specialist Course, Biloxi, MS, and Lecture B-28.

Reference. MAWTS-1 ASP, OPNAVINST 3722.16C, DB 1-83 (MRAALS), and MCO 3501.9B.

## 240. INSTRUCTOR QUALIFICATION TRAINING

1. Purpose. This POI is to be completed prior to designation as an instructor in a particular stage of training; i.e., OJTI(I), MEWTI, etc. Syllabus requirements are designated as Qualification (QUAL).

a. Prerequisite. The controller must be experienced enough to be able to instruct others in the ATC leadership and supervisory functions of this syllabus.

b. Academic Training. None.

c. Live and Simulator Event Training (2 Events, 264 Hours)

2. Instructor Qualification Training

QUAL-500 24.0 L

Goal. Be designated an OJTI Course Instructor.

Requirement. Perform as an OJTI Course Instructor.

Performance Standards. Successfully complete the TyCom OJTI Instructor Course.

Prerequisite. DESG-292.

Reference. FAA/TyCom/Facility OJTI Course.

QUAL-501 240.0 L

Goal. Be designated as a Marine Enlisted Weapons Tactics Instructor (MEWTI).

Requirement. Perform as the MMT/MMT leader instructor for the unit assigned.

Performance Standards. Graduate the MEWTI Course and be certified by MAWTS-1 to be an MMT Leader Instructor.

Prerequisite. CK-380.

Reference. MAWTS Course Catalog.

External Syllabus Support. TEMINS orders to MAWTS-1 as an enlisted WTI student.

260. EXPENDABLE ORDNANCE REQUIREMENTS. None.

270. PROFICIENCY INTERVALS. Tables 2-17, 2-18, and 2-19 contain the proficiency intervals for the Combat Readiness, Combat Qualification, and Full Combat Qualification levels.

Table 2-17.--Enlisted ATC Proficiency Interval for the Combat Readiness Training Level.

| STAGE/EVENT | HRS | PROFICIENCY INTERVAL (Months) | CRP | T | C | R | E | Z |
|---|---|---|---|---|---|---|---|---|
| FAM-200 | 2.0 | 24 | 0.3 | X | | X | | X |
| FAM-201 | 4.0 | 24 | 0.3 | X | | X | | X |
| SYS-220 | 2.0 | 12 | 0.3 | X | | X | | X |
| SYS-221 | 2.0 | 12 | 0.4 | X | | X | | X |
| SYS-222 | 2.0 | 12 | 0.4 | X | | X | | X |
| SYS-223 | 2.0 | 12 | 0.4 | X | | X | | X |
| SYS-224 | 2.0 | 12 | 0.5 | X | | X | | X |
| SYS-225 | 6.0 | 12 | 0.5 | X | | X | | X |
| SYS-226 | 6.0 | 24 | 0.3 | X | | X | | X |
| SIM-230 | 2.0 | 12 | 0.4 | X | | X | | X |
| SIM-231 | 2.0 | 12 | 0.4 | X | | X | | X |
| MMT-260 | 6.0 | 12 | 0.4 | X | | X | | X |
| MMT-261 | 8.0 | NA | 0.5 | X | | X | | X |
| OPS-270 | 80.0 | NA | 0.6 | X | | | | X |
| OPS-271 | 80.0 | NA | 0.6 | X | | | | X |
| OPS-272 | 80.0 | NA | 0.6 | X | | | | X |
| OPS-273 | 80.0 | NA | 0.6 | X | | | | X |
| OPS-274 | 80.0 | NA | 0.6 | X | | | | X |
| OPS-275 | 2.0 | NA | 0.5 | X | | | | X |
| CK-280 | 2.0 | 36 | 1.0 | X | | | X | X |
| CK-281 | 2.0 | 36 | 1.0 | X | | | X | X |
| CK-282 | 2.0 | 36 | 1.0 | X | | | X | X |
| CK-283 | 2.0 | 36 | 1.0 | X | | | X | X |
| CK-284 | 2.0 | 36 | 1.0 | X | | | X | X |
| QUAL-290 | 8.0 | 12 | 0.7 | X | | | X | X |
| QUAL-291 | 6.0 | 12 | 0.7 | X | | | X | X |

Table 2-18.--Enlisted ATC Proficiency Interval for the Combat Qualification Training Level.

| STAGE/EVENT | HRS | PROFICIENCY INTERVAL (Months) | CRP | T | C | R | E | Z |
|---|---|---|---|---|---|---|---|---|
| SIM-330 | 2.0 | 24 | 0.5 | X | | X | | X |
| SIM-331 | 2.0 | 24 | 0.5 | X | | X | | X |
| SIM-332 | 2.0 | 12 | 0.5 | X | | X | | X |
| SIM-333 | 6.0 | 12 | 0.5 | X | | X | | X |
| OPS-370 | 160.0 | 12 | 1.0 | X | | | | X |

| STAGE/EVENT | HRS | PROFICIENCY INTERVAL (Months) | CRP | T | C | R | E | Z |
|---|---|---|---|---|---|---|---|---|
| OPS-371 | 120.0 | 12 | 1.0 | X | | | | X |
| OPS-372 | 120.0 | 12 | 1.0 | X | | | | X |
| OPS-373 | 8.0 | 12 | 1.0 | X | | | | X |
| OPS-374 | 4.0 | 24 | 1.0 | X | | | | X |
| OPS-375 | 2.0 | 12 | 1.0 | X | | | | X |
| OPS-376 | 40.0 | 12 | 1.0 | X | | | | X |
| OPS-377 | 40.0 | 12 | 0.5 | X | | | | X |
| CK-380 | 2.0 | NA | 3.5 | X | | | X | X |
| CK-381 | 2.0 | NA | 2.5 | X | | | X | X |
| CK-382 | 2.0 | NA | 3.5 | X | | | X | X |
| QUAL-390 | 40.0 | NA | 0.5 | X | | | X | X |
| QUAL-391 | 8.0 | NA | 0.5 | X | | | X | X |

Table 2-19.--Enlisted ATC Proficiency Interval for the Full Combat Qualification training Level.

| STAGE/EVENT | HRS | PROFICIENCY INTERVAL (Months) | CRP | T | C | R | E | Z |
|---|---|---|---|---|---|---|---|---|
| OPS-470 | 8.0 | 24 | 0.5 | X | | | | X |
| OPS-471 | NA | NA | 0.5 | X | | | | X |
| OPS-472 | NA | NA | 0.5 | X | | | | X |
| DESG-490 | 80.0 | 36 | 0.5 | X | | | | X |
| DESG-491 | NA | NA | 0.0 | X | | | | |
| DESG-492 | NA | NA | 0.5 | X | | | | |
| DESG-493 | 80.0 | 36 | 0.5 | X | | | | X |
| DESG-494 | NA | NA | 0.0 | X | | | | |
| DESG-495 | NA | NA | 0.5 | X | | | | |
| DESG-496 | NA | NA | 1.0 | X | | | | X |
| DESG-497 | NA | 0.0 | 0.0 | X | | | | |
| DESG-498 | NA | NA | 0.5 | X | | | | |

280. ENLISTED AIR TRAFFIC CONTROLLER UPDATE CHAINING. Table 2-20 contains the event update chaining for the enlisted air traffic controller.

Table 2-20.--Enlisted ATC Event Update Chaining.

| EVENTS | EVENTS UPDATED |
|---|---|
| 200 | |
| 201 | |
| 220 | |
| 221 | |
| 222 | |
| 223 | |
| 224 | |
| 225 | 200 |
| 226 | |
| 230 | 224 |
| 231 | |
| 260 | |
| 261 | 260 |
| 270 | 220 |
| 271 | 220 |
| 272 | 220 |
| 273 | 221 |

| EVENTS | EVENTS UPDATED |
|---|---|
| 274 | 221 |
| 275 | |
| 280 | 220, 270 |
| 281 | 220, 271 |
| 282 | 220, 272 |
| 283 | 221, 273 |
| 284 | 221, 274 |
| 290 | 260, 261 |
| 291 | 224 |
| 330 | |
| 331 | 224 |
| 332 | |
| 333 | 200 |
| 370 | |
| 371 | |
| 372 | |
| 373 | 260, 261, 370 |
| 374 | |
| 375 | |
| 376 | |
| 377 | |
| 380 | 370 |
| 381 | 371 |
| 382 | 372 |
| 390 | |
| 391 | 260, 261, 370, 373, 380 |
| 470 | |
| 471 | |
| 472 | |
| 490 | 380 |
| 491 | 380, 490 |
| 492 | 380, 490, 491 |
| 493 | 371, 372, 381, 382 |
| 494 | 371, 372, 381, 382, 493 |
| 495 | 371, 372, 381, 382, 493, 494 |
| 496 | |
| 497 | |
| 498 | |

# APPENDIX A

## ATCO KNOWLEDGE SYLLABUS

# APPENDIX A

## ATCO KNOWLEDGE SYLLABUS

1. ATC Qualifications

a. Tower Ground Control (TGC) qualification. An ATCO is TGC qualified upon completion of required events in the Combat Ready phase of this syllabus. An entry shall be made in the individual MACCS performance record stating the qualification.

b. Radar Final Controller (RFC) qualification. An ATCO is RFC qualified upon completion of required events in the Combat Ready phase of this syllabus. An entry shall be made in the individual MACCS performance record stating the qualification.

c. Marine ATC Mobile Team Leader (MMT) designation. An ATCO is designated as an MMT member upon completion of the required events in the Combat Ready phase of this syllabus. An ATCO is certified as an MMT Leader upon completion of Combat Qualified phase. A letter shall be inserted in the individual MACCS performance record stating the designation.

d. Facility Watch Officer/Watch Commander (FWO/WC) designation. An ATCO is designated as an FWO/WC by the ATCFO upon completion of required events in the Combat Qualified phase of the tower/radar syllabus. A letter shall be inserted in the individual MACCS performance record stating the qualification.

2. Knowledge Syllabus

a. The ATC MOS is knowledge intensive. The knowledge in this Appendix is required of all ATCOs to obtain not only position qualification but Combat Qualification as well. There is common knowledge applicable to both the tower and radar branches of a facility which has been put in a specific section in the Appendix entitled "Common Knowledge." In addition, each branch has specific knowledge required for qualification.

b. All knowledge in this Appendix is a prerequisite for an event throughout this syllabus. Knowledge associated with a control position will be taught and tested during the student controller’s training. Knowledge in this syllabus shall be tested through examination with a minimum passing score of 80 percent.

c. The following abbreviations apply: Common knowledge (KFAM), Tower Ground Control knowledge (KTGC), Radar Final Control knowledge (KRFC).

3. Common Knowledge

KFAM-200

Topic. Memorize the airfield layout.

Requirement. Draw/label from memory an airfield diagram to include the following:

- Runways.
  - Numbering/marking.
  - Length and width.
  - Aircraft weight bearing capacity.
  - Crash Fire Rescue standby positions.
  - Windsocks (type/capacity).

  - OLS positions.

- Helicopter landing areas/spots name, designation and restrictions.

- Taxiways.
  - Length and width.
  - Directional usage.
  - Aircraft weight bearing capacity.
  - Designation (name/number).
  - Special use areas (hazardous cargo, hot brakes, ordnance load/offload, arm/dearm, etc.).
  - Special routes (VIP, ordnance carrying, etc.).
  - Restrictions.

- Fuel Pits.
  - Number of fueling points.
  - Directional usage.
  - Types of fuel available.

- Aircraft wash rack restrictions and directional usage.

- Tenant aircraft parking ramps.
  - Squadron assigned.
  - Type of aircraft.
  - Tactical call sign/MODEX.
  - Hangar assigned.
  - Taxi routes.

- Transient parking ramps.
  - Restrictions.
  - VIP spots.
  - Taxi routes.

- Crash Fire Rescue location and types of vehicles.

- Hangars.
  - Building number.
  - Unit assigned.
  - Special usage (if applicable).

- Vehicular traffic.
  - Restrictions.
  - Routes.
  - Clearances.
  - Control devices (road lights, traffic arms, etc.).

- Visual aids.
  - Runway lights.
  - Approach lights.
  - Taxiway lights.
  - Airfield beacon.
  - Obstruction lights.
  - Optical landing systems.

- Navigation aids.
  - Type and channel/frequency.
  - Location and monitoring capability.
  - Compass rose.

- Obstructions type, height, and location on the airfield.

- ATC radar types and location.

Reference. Local publications and Flight Information Publications.

KFAM-201

Topic. General ATC knowledge.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch1 | Sec1 | General. |
| Ch1 | Sec2 | Terms Of Reference. |
| Ch2 | Sec1 | General. |
| Ch2 | Sec2 | Forwarding Amended and UTM Data. |
| Ch2 | Sec4 | Radio And Interphone Communication. |
| Ch2 | Sec8 | RVR - Terminal (ARR,DPT,APC). |
| Ch2 | Sec10 | Team Position Responsibilities (Crew). |
| Ch3 | Sec1 | Establishing Two-Way Communications. |
| Ch9 | Sec1 | General (Special Flights). |
| Ch10 | Sec1 | General (Emergencies). |
| Glossary Terms | | |
| | | Additional Service. |
| | | Advisory Frequencies. |
| | | Aerial Refueling. |
| | | Affirmative. |
| | | Roger. |
| | | Wilco. |
| | | Aircraft Classes. |
| | | AirMet. |
| | | Approach Gate. |
| | | Final Approach Fix. |
| | | Final Approach Course. |
| | | Decision Height. |
| | | Overhead Approach. |
| | | Pilot’s Discretion. |
| | | PIREP. |
| | | Preferential Routing. |
| | | Procedure Turn. |
| | | Segments Of Instrument Approach. |
| | | Short Range Clearances. |
| | | Simulated Flameout. |
| | | Published Missed Approach. |
| | | Tower En Route Service. |

Local publications.

KFAM-202

Topic. Local area/airfield specific knowledge.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch3 | Sec3 | Arresting System Operation. |
| Ch3 | Sec5 | Selection. |
| Local publications | | Airfield Weather Minimums. |
| | | Type Aircraft Assigned Each Local Squadron. |
| | | Modex/Tactical Call Sign Of Each Local Squadron. |
| | | Traffic Patterns and NAVAID Procedures. |
| | | Alternate/Divert Airfield. |
| | | Adjacent Airfields. |
| | | Airport Surface Area Description (FAA 7400.8). |
| | | Facility Frequencies. |

KFAM-203

Topic. Emergency/safety knowledge.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| Ch2 | Sec1 | In-Flight Equipment Malfunctions. |
| Ch2 | Sec1 | Minimum Fuel. |
| Ch4 | Sec7 | Below Minima Report By Pilot. |
| Ch5 | Sec2 | Emergency Code Assignment. |
| Ch10 | Sec1 | General. |
| Ch10 | Sec2 | Emergency Assistance. |
| Ch10 | Sec3 | Overdue Aircraft. |
| Ch10 | Sec4 | Control Actions. |
| NAVAIR 00-80T-114 | | |
| Ch3 | | Facility Operation. |
| Ch3 | | Security of Facilities. |
| Ch3 | | Aircraft Accidents and Incidents. |
| Ch3 | | Operational Errors/Deviations. |
| Local publications. | | |

KFAM-204

Topic. Weather knowledge.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| Ch2 | Sec6 | Weather Information. |
| Ch2 | Sec7 | Altimeter Settings. |
| Ch2 | Sec8 | Runway Vsby Reporting-Terminal. |
| Ch2 | Sec9 | ATIS Procedures. |
| Ch3 | Sec1 | Low Level Windshear Advisories. |
| FAA 7210.3L | | |
| Ch12 | Sec3 | Operations. |
| Ch16 | | Aviation Meteorological Services. |

KFAM-205

Topic. Tower equipment.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| Ch2 | Sec1 | NAVAID Malfunction. |
| Ch2 | Sec9 | ATIS. |
| Ch3 | Sec1 | Tower Radar Displays. |
| Ch3 | Sec2 | Light Gun. |
| Ch3 | Sec2 | Receiver Only Acknowledgment. |

| | | |
|---|---|---|
| Ch3 | Sec4 | All Applicable Airport Lighting. |
| Ch3 | Sec6 | ASDE (If Applicable). |

FAA 7210.3

| | | |
|---|---|---|
| Ch3 | | General. |

NAVAIR 00-80T-114

| | | |
|---|---|---|
| Ch2 | | Airport Facilities. |
| Ch6 | | Equipment (Tower). |
| | | Tower Visibility Chart. |

MCO 3501.9 MACCS MCCRES.

Local publications.

KFAM-206

Topic. Airfield lighting.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch3 | Sec4 | Emergency Lighting. |
| Ch3 | Sec4 | Runway End Identifier Lights. |
| Ch3 | Sec4 | VASI Lights. |
| Ch3 | Sec4 | Approach Lights. |
| Ch3 | Sec4 | ALS Intensity. |
| Ch3 | Sec4 | Sequenced Flashing Lights. |
| Ch3 | Sec4 | MALS. |
| Ch3 | Sec4 | ALSF-2. |
| Ch3 | Sec4 | Runway Edge Lights. |
| Ch3 | Sec4 | High Intensity Runway, Centerline Light. |
| Ch3 | Sec4 | HIRL Associated With MALSR. |
| Ch3 | Sec4 | HIRL Changes. |
| Ch3 | Sec4 | Medium Intensity Runway Lights. |
| Ch3 | Sec4 | Simultaneous Approach/Runway Edge. |
| Ch3 | Sec4 | High Speed Turnoff Light. |
| Ch3 | Sec4 | Taxiway Lights. |
| Ch3 | Sec4 | Obstruction Lights. |
| Ch3 | Sec4 | Rotating Beacon. |

FAA 7210.3

| | | |
|---|---|---|
| Ch12 | Sec6 | Airport Lighting. |

NAVAIR 51-50AAA-2 All Airfield Markings.

Local publications.

KFAM-207

Topic. Strip marking.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch2 | Sec2 | Flight Plans and Control Information. |
| Ch2 | Sec3 | Flight Progress Strips. |

Local publications.

KFAM-208

Topic. Radar equipment.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch5 | Sec1 | Presentation and Equip/Performance. |
| Ch5 | Sec1 | Alignment Check. |

Ch5 Sec1 Radar Use.
Ch5 Sec1 Beacon Range Accuracy.
Ch5 Sec1 Electronic Cursor.
Ch5 Sec2 Standby/Low Sensitivity Operation.
Ch5 Sec2 Inoperative Interrogator.
Ch5 Sec2 In-flight Deviations From Transponder.
Ch5 Sec2 Altitude Filters.
Ch5 Sec15 Automated Radar Terminal Systems (ARTS) Terminal.
Ch5 Sec16 TPX-42 – Terminal.

FAA 7210.3L
Ch3 Sec1 General.
Ch3 Sec7 Radar Use.
Ch3 Sec8 Video Maps.

NAVAIR 00-80T-114
Ch2 Airport Facilities.
Ch7 Equipment (Radar).
Appendix J Certification, Rating, and Quality Assurance Program.
Appendix O Precision Approach Landing System Approach Criteria.

Local publications.

KFAM-209

Topic. Daily flight schedule knowledge.

Requirement. Utilize the information on a daily flight schedule to include:

- Schedule appropriate number of position qualified controllers.
- Schedule student controller OJT.
- Identify peak arrival/departure air traffic periods.
- Identify number of aircraft anticipated to fly during the period.
- Identify the types of aircraft that will be flying.

KFAM 210

Topic. Aircraft accident/incident reporting knowledge.

- Initial Response.
- Marking of tapes/transcribing.
- Security of tapes/release authorization.
- Controller position relief.
- Initiate Search and Rescue (SAR) response/updating for the on-scene commander.
- Coordinate with appropriate agencies/officials.
- Required reports.
- Supervision of effort.

4. Radar Section

KRFC-230

Topic. Phraseology/communications.

Reference

FAA 7110.65
Ch2 Sec1 Wheels Down Check.
Ch2 Sec4 Radio and Interphone.
Ch4 Sec2 Clearance Relay.
Ch4 Sec7 Single Frequency Approaches (SFA).
Ch4 Sec8 Communications Release.

Ch5 Sec4 Terms.
Ch5 Sec6 Methods (Vectoring).
Ch5 Sec7 Application (Radar Approaches).
Ch5 Sec10 No-Gyro Approach.
Ch5 Sec10 Lost Communications.
Ch5 Sec10 Radar Contact Lost.
Ch5 Sec10 Landing Check.
Ch5 Sec10 Position Information.
Ch5 Sec10 Final Controller Changeover.
Ch5 Sec10 Communications Check.
Ch5 Sec10 Transmission Acknowledgment.
Ch5 Sec10 Missed Approach.
Ch5 Sec10 Low Approach and Touch-and-Go.
Ch5 Sec10 Tower Clearance.
Ch5 Sec10 Final Approach Abnormalities.
Ch5 Sec10 Military Single Frequency Approaches.
Ch5 Sec11 Surveillance Approach.
Ch5 Sec12 Precision Approach Radar.
Ch5 Sec13 Use of PAR for Approach Monitoring.
Local publications.

KRFC-231

Topic. Clearance/coordination.

Reference

FAA 7110.65
Ch3 Sec1 Low Level Windshear Advisories.
Ch3 Sec10 Altitude Restricted Approach.
Ch4 Sec8 Circling Approach.
Ch4 Sec8 Missed Approach.
Ch4 Sec8 Low Approach and Touch-and-Go.
Local publications.

KRFC-232

Topic. Separation knowledge.

Reference

FAA 7110.65
Ch2 Sec1 Formation Flights.
Ch2 Sec1 Wake Turbulence.
Ch2 Sec1 Wake Turbulence Advisories.
Ch2 Sec1 Traffic Advisories.
Ch2 Sec1 Bird Activity Information.
Ch3 Sec1 Traffic Information.
Ch4 Sec5 Vertical Separation Minima.
Ch5 Sec3 ARTS/PIDP Identification Methods.
Ch5 Sec3 Questionable Identification.
Ch5 Sec4 Methods (Transfer of Radar ID).
Ch5 Sec4 Traffic (Radar Separation).
Ch5 Sec5 Application.
Ch5 Sec5 Target Separation.
Ch5 Sec5 Minima (Radar Separation).
Ch5 Sec5 Additional Separation for Formation Flights.
Ch5 Sec9 Approach Separation Responsibilities.
Ch7 Sec2 Visual Separation.
Local publications.

KRFC-233

Topic. Letters of Agreement and Facility Directives/Memos/Publications.

Reference

| | |
|---|---|
| FAA 7220.1 | Operational Position Standards. |
| FAA 7110.65 | Air Traffic Control. |
| FAA 7210.3 | Facility Operations. |
| FAA 7340.1 | Contractions Manual. |
| FAR 91 | General Operating. |
| AOM | Airfield Operations. |
| ATC FacMan | Facility Operations. |
| IFR Supplement. | |
| VFR Supplement. | |
| NOTAMS | General Notices. |
| AP1B | Military Training Routes. |
| LOCAL Sectional | |
| SECNAVINST 5216.5C | Memorandum of Understanding. |
| AIM | Airman's Information Manual. |
| NAVAIR 00-80T-114 | |
| Ch3 | Facility Management. |
| Appendix C | Sample format for FAA/USN Letter of Agreement Concerning Control of Air Traffic. |
| Appendix D | Memorandum of Agreement. |
| RATCF DAIR Operator's Manual. | |
| Low Altitude United States. | |
| High Altitude United States. | |
| Local publications. | |

5. Tower Section

KTGC-240

Topic. Phraseology/communications knowledge.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| Ch2 | Sec4 | Radio and Interphone Communications. |
| Ch3 | Sec2 | Light Signals. |
| Local publications. | | |

KTGC-241

Topic. Clearance/coordination knowledge.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| Ch2 | Sec5 | Route and NAVAID Description. |
| Ch4 | Sec2 | Clearance Items. |
| Ch4 | Sec2 | Clearance Prefix. |
| Ch4 | Sec2 | Delivery Instructions. |
| Ch4 | Sec2 | Clearance Relay. |
| Ch4 | Sec2 | Route or Altitude Amendments. |
| Ch4 | Sec2 | Through Clearances. |
| Ch4 | Sec2 | ALTRV Clearance. |
| Ch4 | Sec2 | IFR-VFR and VFR-IFR Flights. |
| Ch4 | Sec2 | Clearance Items. |
| Ch4 | Sec3 | Departure Procedures. |

Ch4 Sec4 Route Use.
Ch4 Sec4 Route Structure Transitions.
Ch4 Sec4 Class G Airspace.
Ch4 Sec5 Flight Direction.
Ch4 Sec5 Exceptions.
Ch4 Sec5 Lowest Usable Flight Level.
Local publications.

KTGC-242

Topic. Separation knowledge.

Reference

FAA 7110.65
Ch3 Sec1 Provide Service.
Ch3 Sec1 Preventive Control.
Ch3 Sec1 Use of Active Runways.
Ch3 Sec1 Coordination Local and Ground.
Ch3 Sec1 Vehicles/Equipment/Personnel On Runway.
Ch3 Sec1 Traffic Information.
Ch3 Sec1 Position Determination.
Ch3 Sec1 Low Level Windshear Advisories.
Ch3 Sec1 Observed Abnormalities.
Ch3 Sec1 Visually Scanning Runways.
Ch3 Sec3 Landing Area Condition.
Ch3 Sec3 Closed/Unsafe Runway Information.
Ch3 Sec3 Timely Information.
Ch3 Sec3 Braking Action.
Ch3 Sec3 Braking Action Advisories.
Ch3 Sec3 Arresting System Operation.
Ch3 Sec7 Ground Traffic Movement.
Ch3 Sec7 Taxi/Ground Movement Operations.
Ch3 Sec7 Ground Operations.
Ch3 Sec7 Runway Proximity.
Ch3 Sec7 Precision Approach Critical Area.
Ch3 Sec11 Taxi/Ground Movement Operation.
Local publications.

KTGC-243

Topic. Letters of Agreements and Facility Directives/Memos/Publications.

Reference

FAA 7220.1 Operational Position Standards.
FAA 7110.65 Air Traffic Control.
FAA 7210.3 Facility Operations.
FAA 7340.1 Contractions Manual.
FAR 91 General Operating.
AIM Airman's Information Manual.
AOM Airfield Operations.
ATC FacMan Facility Operations.
IFR Supplement.
VFR Supplement.
NOTAMS General Notices.
AP1B Military Training Routes.
Local Sectional
SECNAVINST 5216.5C Memorandum of Understanding.
NAVAIR 00-80T-114
Ch3 Facility Management.

# APPENDIX B

## ENLISTED CONTROLLER KNOWLEDGE SYLLABUS

# APPENDIX B

## ENLISTED CONTROLLER KNOWLEDGE SYLLABUS

1. ATC Qualifications

a. Tower Flight Data (TFD) qualification. An enlisted controller is TFD qualified upon completion of required events in the Combat Ready phase of this syllabus. An entry shall be made in the individual MACCS performance record stating the qualification.

b. Tower Ground Control (TGC) qualification. An enlisted controller is TGC qualified upon completion of required events in the Combat Ready phase of this syllabus. An entry shall be made in the individual MACCS performance record stating the qualification.

c. Radar Flight Data (RFD) qualification. An enlisted controller is RFD qualified upon completion of required events in the Combat Ready phase of this syllabus. An entry shall be made in the individual MACCS performance record stating the qualification.

d. Radar Final Controller (RFC) qualification. An enlisted controller is RFC qualified upon completion of required events in the Combat Ready phase of this syllabus. An entry shall be made in the individual MACCS performance record stating the qualification.

e. Data Link Coordinator (DLC) qualification. An enlisted controller is DLC qualified upon completion of required familiarization events in the appendix of this syllabus. An entry shall be made in the individual MACCS performance record stating the qualification.

f. Marine ATC Mobile Team Member/Leader (MMT) qualification. An enlisted controller is designated as an MMT member upon completion of the Combat Ready phase of this syllabus. A controller is certified an MMT Leader upon completion of the combat qualified phase. An entry shall be made in the individual MACCS performance record stating the qualification.

g. Tower Local Control (TLC) qualification. An enlisted controller is TLC qualified upon completion of required events in the Combat Qualification phase of this syllabus. An entry shall be made in the individual MACCS performance record stating the qualification.

h. Radar Air Traffic Control Facility (RATCF) qualification. An enlisted controller is RATCF qualified upon completion of required events in the Combat Qualification phase of this syllabus. Approach training shall be utilized and a RATCF qualification will be achieved when certified on any RATCF positions which incorporate control of both arrival and departure traffic. This qualification is only used where no approach facility exists. An entry shall be made in the individual MACCS performance record stating the qualification.

i. Approach Controller (APC) qualification. An enlisted controller is APC qualified upon completion of required events in the Combat Qualified phase of this syllabus. An entry shall be made in the individual MACCS performance record stating the qualification. Approach control training will be utilized and an approach qualification will be achieved when certified on any RATCF positions which incorporate control of both arrival and departure traffic. An entry shall be made in the individual MACCS performance record stating the qualification.

j. Tower Watch Supervisor (TWS) designation. An enlisted controller is designated a TWS by the ATCFO upon completion of required events in the Full

Combat Qualification phase of the syllabus. A letter shall be inserted in the individual MACCS performance record stating the qualification.

k. Radar Watch Supervisor (RWS) designation. An enlisted controller is designated an RWS by the ATCFO upon completion of required events in the Full Combat Qualification phase of the syllabus. A letter shall be inserted in the individual MACCS performance record stating the qualification.

l. Facility Watch Officer/Watch Commander (FWO/WC) designation. An enlisted controller is designated an FWO/WC by the ATCFO upon completion of required events in the Full Combat Qualification phase of the syllabus. A letter shall be inserted in the individual MACCS performance record stating the qualification.

2. Knowledge Syllabus

a. The ATC MOS is knowledge intensive. The knowledge in this appendix is required of a controller to obtain not only position qualifications but combat qualifications as well. There is common knowledge applicable to both the tower and radar branches of a facility which has been put in a separate section entitled "Common Knowledge." In addition, each branch has specific knowledge required for qualification for which each has a specific section in the appendix.

b. All knowledge in this appendix is a prerequisite for an event throughout this syllabus. Knowledge associated with a control position will be taught and tested during the student controller's training. **Knowledge in this syllabus shall be tested through examination with a minimum passing score of 80 percent**.

c. The following abbreviations apply: Common knowledge (KFAM), Tower common knowledge (KTWR), Radar common knowledge (KRDR), Tower Flight Data knowledge (KTFD), Tower Ground Control knowledge (KTGC), Tower Local Control knowledge (KTLC), Radar Flight Data knowledge (KRFD), Radar Final Control knowledge (KRFC), and Approach Control knowledge (KAPC). RATCF qualifications require comprehension of approach control knowledge.

d. At the end of the appendix is a list of recommended knowledge consisting of Navy, Air Force, Army, and Joint Modules. These modules will enhance the warfighting capabilities of our senior enlisted Marines.

3. Common Knowledge

KFAM-200

Topic. Memorize the airfield layout.

Requirement. Draw/label from memory an airfield diagram to include:

- Runways.
  - Numbering/marking.
  - Length and width.
  - Aircraft weight bearing capacity.
  - Crash Fire Rescue standby positions.
  - Windsocks (type/capacity).
  - Optical landing system positions.

- Helicopter landing areas/spots.
  - Name/designation.
  - Restrictions.

- Taxiways.
  - Length and width.
  - Directional usage.
  - Aircraft weight bearing capacity.
  - Designation (name/number).
  - Special use areas (hazardous cargo, hot brakes, ordnance load/offload, arm/dearm, etc.).
  - Special routes (VIP, ordnance carrying, etc.).
  - Restrictions.

- Fuel Pits.
  - Number of fueling points.
  - Directional usage.
  - Types of fuel available.

- Aircraft wash racks.
  - Restrictions.
  - Directional usage.

- Tenant aircraft parking ramps.
  - Squadron assigned.
  - Type of aircraft.
  - Tactical call sign/MODEX.
  - Hangar assigned.
  - Taxi routes.

- Transient parking ramps.
  - Restrictions.
  - VIP spots.
  - Taxi routes.

- Crash Fire Rescue.
  - Location.
  - Types of vehicles.

- Hangars.
  - Building number.
  - Unit assigned.
  - Special usage (if applicable).

- Vehicular traffic.
  - Restrictions.
  - Routes.
  - Clearances.
  - Control devices (road lights, traffic arms, etc.).

- Visual aids.
  - Runway lights.
  - Approach lights.
  - Taxiway lights.

- Airfield beacon.
- Obstruction lights.
- Optical landing systems.

- Navigation aids.
  - Type and channel/frequency.
  - Location and monitoring capability.
  - Compass rose.

- Obstructions on the airfield.
  - Type, height, and location.

- ATC radar types and location.

Reference. Local publications and Flight Information Publications.

KFAM-201

Topic. General ATC knowledge.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch1 | Sec1 | General. |
| Ch1 | Sec2 | Terms of Reference. |
| Ch2 | Sec1 | General. |
| Ch2 | Sec2 | Forwarding Amended and UTM Data. |
| Ch2 | Sec4 | Radio and Interphone Communication. |
| Ch2 | Sec8 | RVR - Terminal (ARR,DPT,APC). |
| Ch2 | Sec10 | Team Position Responsibilities(Crew). |
| Ch3 | Sec1 | Establishing Two Way Communications. |
| Ch9 | Sec1 | General (Special Flights). |
| Ch10 | Sec1 | General (Emergencies). |

Glossary Terms

Additional Service.
Advisory Frequencies.
Aerial Refueling.
Affirmative.
Roger.
Wilco.
Aircraft Classes.
AirMet.
Approach Gate.
Final Approach Fix.
Final Approach Course.
Decision Height.
Overhead Approach.
Pilot’s Discretion.
PIREP.
Preferential Routing.
Procedure Turn.
Segments of Instrument Approach.
Short Range Clearances.
Simulated Flameout.
Published Missed Approach.
Tower En Route Service.

Local publications.

KFAM-202

Topic. Local area/airfield specific knowledge.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| | Ch 3 Sec 3 | Arresting System Operation. |
| | Ch 3 Sec 5 | Selection. |
| Local publications | | Airfield Weather Minimums. |
| | | Type Aircraft Assigned Each Local Squadron. |
| | | Modex/Tactical Call of Each Local Squadron. |
| | | Traffic Patterns and NAVAID Procedures. |
| | | Alternate/Divert Airfield. |
| | | Adjacent Airfields. |
| | | Airport Surface Area Description. |
| | | Facility Frequencies. |

KFAM-203

Topic. Emergency/Safety knowledge.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| | Ch2 Sec1 | Inflight Equipment Malfunctions. |
| | Ch2 Sec1 | Minimum Fuel. |
| | Ch4 Sec7 | Below Minima Report by Pilot. |
| | Ch5 Sec2 | Emergency Code Assignment. |
| | Ch10 Sec1 | General. |
| | Ch10 Sec2 | Emergency Assistance. |
| | Ch10 Sec3 | Overdue Aircraft. |
| | Ch10 Sec4 | Control Actions. |
| NAVAIR 00-80T-114 | | |
| | Ch3 | Facility Operation. |
| | Ch3 | Security of Facilities. |
| | Ch3 | Aircraft Accidents and Incidents. |
| | Ch3 | Operational Errors/Deviations. |
| Local publications. | | |

KFAM-204

Topic. Weather knowledge.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| | Ch2 Sec6 | Weather Information. |
| | Ch2 Sec7 | Altimeter Settings. |
| | Ch2 Sec8 | Runway Vsby Reporting-Terminal. |
| | Ch2 Sec9 | ATIS Procedures. |
| | Ch3 Sec1 | Low Level Windshear Advisories. |
| FAA 7210.3L | | |
| | Ch12 Sec3 | Operations. |
| | Ch16 | Aviation Meteorological Services. |
| Local publications. | | |

KFAM-205

Topic. Mission, tasks, and organization of the MACS.

Requirement

- Mission of the MACS.
- MAGTF commander concept of employment.
- Three operational sections of a MACS ATC detachment.
- Relationship of MACS ATC Detachment to the MACCS.
- MAGTF MACS employment options as applicable to:
  - Marine Expeditionary Unit.
  - Marine Expeditionary Brigade.
  - Marine Expeditionary Force.
  - Special Purpose MAGTF.

Reference. Lectures A-01 through A-08, "Marine Air Control Squadron (#00305)", MAWTS-1 ASP, and NAVAIR 00-80T-115.

KFAM-206

Topic. MATCD systems and support equipment.

Requirement. Locate, identify and state the nomenclature of the following MATCD support equipment:

- AN/HD-1099, Air Conditioner.
- AN/MEP-006A, Generator With Load Bank.
- AN/MEP-15, Generator.
- VM-1503, Mobilizer.
- 9503, Mobilizer.
- M1022, Mobilizer.
- M998, HMMWV.
- TSM-170, Maintenance Van.
- AN/GRC-171(V)1, UHF Radio.
- AN/GRC-171(V)2, UHF Radio.
- AN/GRC-211, VHF Radio.
- AN/URC-94(V)2, VHF-FM/HF-AM SSB Radio.
- AN/VRC-82, VHF-FM Radio.
- AN/TPN-30, (MRAALS).
- AN/TPS-73, Air Traffic Control Subsystem (ATCS).
- AN/TPN-22, Automatic Landing Subsystem (ALS).
- AN/TSQ-131, Control and Communication Subsystem (CCS).
- AN/TRN-44, TACAN.
- AN/TRC-195, Portable Tower (Control Central).
- AN/TSQ-216, Remote Landing Site Tower (RLST).
- AN/TSQ-120A/B, Control Tower.

KFAM-207

Topic. Tactical Landing Zone (TLZ).

Requirement. Describe the correct procedures for establishing a TLZ.

Reference. AFI 13-217, NAVAIR 01-75GAA-1T, MAWTS-1 ASP, and MMT SOP.

KFAM-208

Topic. Obtain, record, and relay a close air support brief.

Requirement. With an Air Support Request, receive and relay a nine line brief to appropriate agencies.

Prerequisite. Lectures A-04, B-09, and B-16.

KFAM-209

Topic. Knowledge of organic communications equipment.

Requirement. Explain the characteristics of each piece of equipment and the purposes, responsibilities and components of COMSEC and the principles of transmission, physical and cryptographic security (as applicable) of the following:

- AN/GRC-171 (V) (Tower).
- AN/GRC-171 (V) (TADIL-C).
- AN/GRC-211.
- AN/URC-94 (V).
- AN/VRC-82.
- KG-84C.
- KY-58.
- KY-99.
- KIR-1C.
- KY-75.
- KYK-13.
- KOI-18.
- ARC-210.
- CYZ-10.

Prerequisite. Lecture A-19.

KFAM-300

Topic. Obtain working knowledge of communications plans and orders.

Requirement. With an Automated Communications Electronic Operating Instruction (ACEOI), MCI 25.4, and other references as required, explain the purpose and use of a communications plan, ACEOI (with specific emphasis on ATC items), and Annex K of an operations order/plan.

KFAM-301

Topic. Describe the communications flow within the MACCS.

Requirement. Describe the communications flow within the MACCS to include agency connectivity using the following nets:

- Track Supervision Net (TSN).
- Tactical Coordination Net (TCN).
- Combat Information/Detection Net (CI/D).
- Tactical Air Command Net (TAC CMD).
- Tactical Air Traffic Control Net (TATC).
- Direct Air Support Net (DAS).
- Command Coordination Net (COMM COORD).

Prerequisite. Lectures B-15 and B-22.

KFAM-302

Topic. Demonstrate knowledge of Electronic Warfare (EW) and its effects on MATCD equipment.

Requirement. Explain the following EW subjects:

- Electronic Attack Brevity Codes(EA).
- Electronic Protection (EP).

- Radiation Control (RADCON).
- Emission Control (EMCON) as it applies to ATC.
- The effects of chaff on ATC radars.
- Definition of the types of active EP.
- Definition of different types of EA techniques.
- Meaconing, Intrusion, Jamming and Interference (MIJI) reporting as it applies to the following ATC equipment:
  - AN/TSQ-120.
  - AN/TRN-44.
  - AN/TPN-30.
  - AN/TSQ-131.
  - AN/TPS-73.
  - AN/TPN-22.

Prerequisite. Lecture B-14.

KFAM-303

Topic. Obtain a basic knowledge of Early Warning Control Site (EWC)/Tactical Air Operations Center (TAOC).

Requirement. Describe the Early Warning Control site (EWC)/TAOC to include:

- Radar types and capabilities.
- TAOM capabilities.
- TADIL capabilities.
- Communications assets.

Prerequisite. Lecture B-08.

KFAM-304

Topic. The role of the Short Range Air Defense (SHORAD) detachment and its integration into the MACCS (REIN).

Requirement. Explain the following aspects of the Low Altitude Air Defense (LAAD) detachment:

- Tactical role within the MACCS.
- Structure - Firing battery, Remote Engagement Site (RES), Secondary Acquisition Sector (SAS).
- Radar types - Continuous Wave Acquisition Radar (CWAR), Sentinel, Tactical Defense Alert Radar (TDAR).
- Datalink connectivity (ATDL-1).

Prerequisite. Lecture B-11.

KFAM-305

Topic. Forward Operating Bases (FOBs) and how the MATC Detachment supports them.

Requirement. Describe each FOB and how the MATCD is employed in support of:

- Main Air Base.
- Air Facility.
- Rapid Ground Refueling (RGR) procedures.
- Air Site - Tactical Landing Zone (TLZ), Helicopter Landing Zones (HLZ).

- Air Point - Forward Arming and Refueling Point, Rapid Ground Refueling (RGR), Lager Point.

KFAM-400

Topic. Development process of the Air Tasking Order (ATO)/Air Control Order (ACO).

Requirement. Describe the elements and process used to develop an ATO and ACO using the ATO construction manual.

KFAM-401

Topic. Master knowledge and proficiency to execute the fundamental principles of rear area security planning.

Requirement. Apply the concepts and terminology common to the conduct of rear area security operations. Describe the interrelationships between:

- Joint Rear Area Coordination (JRAC).
- Combat Service Support Operations Center (CSSOC).
- Rear Area Security Coordinator (RASC).
- Rear Area Operations Center (RAOC).
- Tactical Security Officer (TSO).
- Assistant TSO (ATSO).
- Patrol Leader (PL).
- Roving Patrol/Reaction Team.
- Sentry Posts (SPs).
- Observation Posts (OPs).
- Listening Posts (LPs).

KFAM-402

Topic. Demonstrate knowledge of the site selection process for a MATCD.

Requirement. With appropriate maps and/or aerial photographs, references, and mission statement, demonstrate the site selection process for a MATCD to include:

- Select an ATC Detachment site considering:
  - Mission.
  - Reconnaissance of selected sites.
  - Tower placement.
  - PAR placement.
  - ASR placement.
  - CCS placement.
  - Radar coverage.
  - Camouflage.
  - Site security.
  - Communications.
  - Support equipment.
- Account for the following ATC equipment characteristics:
  - Siting limits of the radar set.
  - Optimum runway/sector coverage.
  - Obstructions to radar view.
  - Terrain characteristics.
  - Typical siting configurations.

- Power requirements.
- Installation requirements.
- Wind survival tie down procedures.

KFAM-403

Topic. Develop and staff a Letter of Agreement (LOA)/Letter of Instruction (LOI).

Requirement. With use of reference and provided scenario information, learn how to prepare an LOA and an LOI to include:

- Purpose.
- Content.
- Controlling agencies involved.
- Distribution.
- Applicability.

KFAM-404

Topic. Staff a waiver request to required FAA regulations through chain of command/CNO.

Requirement. In a classroom setting, with reference and scenario information provided, learn how to prepare a waiver to include.

- Purpose.
- Content.
- Justification.
- Controlling agencies involved.
- Distribution.
- Applicability.
- Alternate and safe procedures.

KFAM-405

Topic. Terminal Instrument Procedures (TERPS).

Requirement. Explain the purpose of TERPS to include:

- Two types of terminal instrument procedures.
- Four segments in procedures construction.
- MATCD NAVAIDS equipment.
- Two areas of each segment.
- Required obstacle clearance for each approach segment.

Prerequisite. Lecture B-28.

KFAM-406

Topic. ATC tactical crew brief.

Requirement. During an operation or a training exercise, properly conduct an ATC tactical crew brief to include:

- Enemy and friendly situation.
- Air defense warning condition.
- Air defense alert state.
- Air defense weapons release condition.
- Continuing missions.

- Scheduled events.
- Published air tasking order (ATO).
- Assigned frequencies/callsigns.
- Weather.
- Equipment status.
- Crew requirements.
- Emergency procedures.

Prerequisite. Lectures A-12, A-13 and B-1 through B-13.

KFAM-407

Topic. Facility/Personnel/Operations/Training Management knowledge applied in OJT environment.

Reference

| | |
|---|---|
| FAA 7220.1 | Operational Position Standards. |
| FAA 7110.65 | Air Traffic Control. |
| FAA 7210.3 | Facility Operations. |
| FAA 7340.1 | Contractions Manual. |
| FAR 91 | General Operating. |
| AIM | Aeronautical Information Manual |
| AOM | Airfield Operations. |
| ATC FacMan | Facility Operations. |
| IFR Supplement | |
| VFR Supplement | |
| NOTAMS | General notices. |
| AP1B | North American Military Training Route. |
| Local Sectional | |
| SECNAV 5216.5C | Memorandum Of Understanding. |
| NAVAIR 00-80T-114 | |
| Ch 2 | General. |
| Ch 3 | Facility Management. |
| Ch 4 | Naval Certification Procedures. |
| Ch 6 | Control Tower. |
| Ch 8 | Training, Standardization, and Air Traffic Controller Performance Evaluations. |
| Appendix C | Sample format for FAA/USN Letter of Agreement Concerning Control of Air Traffic. |
| Appendix D | Memorandum of Agreement. |
| RATCF DAIR Operator's Manual. | |
| Low Altitude United States. | |
| High Altitude United States. | |
| Local publications. | |

4. Tower Knowledge

KTWR-210

Topic. Tower equipment.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| Ch2 | Sec1 | NAVAID Malfunction. |
| Ch2 | Sec9 | ATIS. |
| Ch3 | Sec1 | Tower Radar Displays. |
| Ch3 | Sec2 | Light Gun. |
| Ch3 | Sec2 | Receiver Only Acknowledgment. |
| Ch3 | Sec4 | All Applicable Airport Lighting. |

| | | |
|---|---|---|
| | Ch3 Sec6 | ASDE (if applicable). |
| FAA 7210.3 | | |
| | Ch3 | General. |
| NAVAIR 00-80T-114 | | |
| | Ch2 | Airport Facilities. |
| | Ch6 | Equipment (Tower). |
| | | Tower Visibility Chart. |
| MCO 3501.9 | | MACCS MCCRES. |
| Local publications. | | |

KTWR-211

Topic. Strip marking.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| | Ch2 Sec 2 | Flight Plans and Control Information. |
| | Ch2 Sec 3 | Flight Progress Strips. |
| Local publications. | | |

KTWR-212

Topic. Airfield Lighting.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| | Ch3 Sec4 | Emergency Lighting. |
| | Ch3 Sec4 | Runway End Identifier Lights. |
| | Ch3 Sec4 | VASI Lights. |
| | Ch3 Sec4 | Approach Lights. |
| | Ch3 Sec4 | ALS Intensity. |
| | Ch3 Sec4 | Sequenced Flashing Lights. |
| | Ch3 Sec4 | MALS. |
| | Ch3 Sec4 | ALSF-2. |
| | Ch3 Sec4 | Runway Edge Lights. |
| | Ch3 Sec4 | High Intensity Runway, Centerline Light. |
| | Ch3 Sec4 | HIRL Associated With MALSR. |
| | Ch3 Sec4 | HIRL Changes. |
| | Ch3 Sec4 | Medium Intensity Runway Lights. |
| | Ch3 Sec4 | Simultaneous Approach/Runway Edge. |
| | Ch3 Sec4 | High Speed Turnoff Light. |
| | Ch3 Sec4 | Taxiway Lights. |
| | Ch3 Sec4 | Obstruction Lights. |
| | Ch3 Sec4 | Rotating Beacon. |
| FAA 7210.3 | | |
| | Ch12 Sec6 | Airport Lighting. |
| NAVAIR 51-50AAA-2 | | (All Airfield markings). |
| Local publications. | | |

KTFD-240

Topic. Phraseology/Communications.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| | Ch2 Sec4 | Radio and Interphone Communications. |
| Local publications. | | |

KTFD-241

Topic. Clearance/coordination.

Reference

FAA 7110.65
- Ch2 Sec5 Route and NAVAID Description.
- Ch4 Sec2 Clearances.
- Ch4 Sec3 Departure Procedures.
- Ch4 Sec4 Route Use.
- Ch4 Sec4 Route Structure Transitions.
- Ch4 Sec4 Class G Airspace.
- Ch4 Sec5 Flight Direction.
- Ch4 Sec5 Exceptions.
- Ch4 Sec5 Lowest Usable Flight Level.

Local publications.

KTFD-242

Topic. Letters of Agreements/Facility Directives/Facility Memos/Publications.

Reference

FAA 7220.1 Operational Position Standards.
FAA 7110.65 Air Traffic Control.
FAA 7210.3 Facility Operations.
FAA 7340.1 Contractions Manual.
FAR 91 General Operating.
AIM Airman's Information Manual
AOM Airfield Operations.
ATC FacMan Facility Operations.
IFR Supplement
VFR Supplement
NOTAMS General Notices.
AP1B Military Training Route.
Local Sectional
SECNAVINST 5216.5C Memorandum of Understanding.
NAVAIR 00-80T-114
- Ch 3 Facility Management.
- Appendix C Sample Format for FAA/USN Letter of Agreement Concerning Control of Air Traffic.
- Appendix D Memorandum of Agreement.

Low Altitude United States.
High Altitude United States.
Letters of Agreement.

KTGC-243

Topic. Phraseology/communications.

Reference

FAA 7110.65
- Ch2 Sec4 Radio and Interphone Communications.
- Ch3 Sec2 Light Signals.

Local publications.

KTGC-244

Topic. Clearance/coordination.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch2 | Sec5 | Route and NAVAID Description. |
| Ch4 | Sec2 | Clearance Items. |
| Ch4 | Sec2 | Clearance Prefix. |
| Ch4 | Sec2 | Delivery Instructions. |
| Ch4 | Sec2 | Clearance Relay. |
| Ch4 | Sec2 | Route or Altitude Amendments. |
| Ch4 | Sec2 | Through Clearances. |
| Ch4 | Sec2 | ALTRV Clearance. |
| Ch4 | Sec2 | IFR-VFR and VFR-IFR Flights. |
| Ch4 | Sec2 | Clearance Items. |
| Ch4 | Sec3 | Departure Procedures. |
| Ch4 | Sec4 | Route Use. |
| Ch4 | Sec4 | Route Structure Transitions. |
| Ch4 | Sec4 | Class G Airspace. |
| Ch4 | Sec5 | Flight Direction. |
| Ch4 | Sec5 | Exceptions. |
| Ch4 | Sec5 | Lowest Usable Flight Level. |

Local publications.

KTGC-245

Topic. Separation.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch3 | Sec1 | Provide Service. |
| Ch3 | Sec1 | Preventive Control. |
| Ch3 | Sec1 | Use of Active Runways. |
| Ch3 | Sec1 | Coordination Local and Ground. |
| Ch3 | Sec1 | Vehicles/Equipment/Personnel on Runway. |
| Ch3 | Sec1 | Traffic Information. |
| Ch3 | Sec1 | Position Determination. |
| Ch3 | Sec1 | Low Level Windshear Advisories. |
| Ch3 | Sec1 | Observed Abnormalities. |
| Ch3 | Sec1 | Visually Scanning Runways. |
| Ch3 | Sec3 | Landing Area Condition. |
| Ch3 | Sec3 | Closed/Unsafe Runway Information. |
| Ch3 | Sec3 | Timely Information. |
| Ch3 | Sec3 | Braking Action. |
| Ch3 | Sec3 | Braking Action Advisories. |
| Ch3 | Sec3 | Arresting System Operation. |
| Ch3 | Sec7 | Ground Traffic Movement. |
| Ch3 | Sec7 | Taxi/Ground Movement Operations. |
| Ch3 | Sec7 | Ground Operations. |
| Ch3 | Sec7 | Runway Proximity. |
| Ch3 | Sec7 | Precision Approach Critical Area. |
| Ch3 | Sec11 | Taxi/Ground Movement Operation. |

Local publications.

KTGC-246

Topic. Letters of Agreement and Facility Directives/Memos/Publications.

Reference

| | |
|---|---|
| FAA 7220.1 | Operational Position Standards. |
| FAA 7110.65 | Air Traffic Control. |
| FAA 7210.3 | Facility Operations. |
| FAA 7340.1 | Contractions Manual. |
| FAR 91 | General Operating. |
| AIM | Airman's Information Manual. |
| AOM | Airfield Operations. |
| ATC FacMan | Facility Operations. |
| IFR Supplement. | |
| VFR Supplement. | |
| NOTAMS | General Notices. |
| AP1B | North American Military Training Routes. |
| Local Sectional. | |
| SECNAVINST 5216.5C | Memorandum of Understanding. |
| NAVAIR 00-80T-114: | |
| Chapter 3 | Facility Management. |
| Appendix C | Sample Format for FAA/USN Letter of Agreement Concerning Control of Air Traffic. |
| Appendix D | Memorandum of Agreement. |
| Low Altitude United States. | |
| High Altitude United States. | |

KTWR-310

Topic. Tower equipment as applied on the Tower Local Control position.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| Ch2 | Sec1 | NAVAID Malfunction. |
| Ch2 | Sec9 | ATIS. |
| Ch3 | Sec1 | Tower Radar Displays. |
| Ch3 | Sec2 | Light Gun. |
| Ch3 | Sec2 | Receiver Only Acknowledgment. |
| Ch3 | Sec6 | ASDE (If Applicable). |
| FAA 7210.3 | | |
| Ch3 | Sec1 | General. |
| NAVAIR 00-80T-114: | | |
| Ch2 | | Airport Facilities. |
| Ch6 | | Equipment (Tower). |
| Ch6 | | Tower Visibility Chart. |
| Local publications. | | |

KTWR-311

Topic. General ATC knowledge in a Tower Local Control environment.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| Ch1 | Sec1 | General. |
| Ch1 | Sec2 | Terms of Reference. |
| Ch2 | Sec1 | General. |
| Ch2 | Sec2 | Forwarding Amended And UTM Data. |
| Ch2 | Sec4 | Radio and Interphone Communication. |
| Ch2 | Sec8 | RVR - Terminal (ARR,DPT,APC). |
| Ch2 | Sec10 | Team Position Responsibilities(Crew). |
| Ch3 | Sec1 | Establishing Two-way Communications. |
| Ch9 | Sec1 | General (Special Flights). |

Ch10 Sec1 General (Emergencies).
Glossary Terms.
Additional Service.
Advisory Frequencies.
Aerial Refueling.
Affirmative.
Roger.
Wilco.
Aircraft Classes.
AirMet.
Approach Gate.
Final Approach Fix.
Final Approach Course.
Decision Height.
Overhead Approach.
Pilots Discretion.
PIREP.
Preferential Routing.
Procedure Turn.
Segments of Instrument Approach.
Short Range Clearances.
Simulated Flameout.
Published Missed Approach.
Tower En Route Service.
Local publications.

KTWR-312

Topic. Local area/airfield specific knowledge applied in a Tower Local Control environment.

Reference

FAA 7110.65
Ch3 Sec3 Arresting System Operation.
Ch3 Sec5 Selection.
Facility Manual Airfield Weather Minimums.
Type Aircraft Assigned Each Local Squadron.
Modex/Tactical Call of Each Local Squadron.
Traffic Patterns and NAVAID Procedures.
Alternate/Divert Airfield.
Adjacent Airfields.
Airport Surface Area Description (FAA 7400.8).
Facility Frequencies.

KTWR-313

Topic. Strip marking knowledge applied in a Tower Local Control environment.

Reference

FAA 7110.65
Ch2 Sec2 Flight Plans and Control Information.
Ch2 Sec3 Flight Progress Strips.
Local publications.

KTWR-314

Topic. Emergency/safety knowledge applied in a Tower Local Control environment.

Reference

FAA 7110.65
- Ch2 Sec1 Inflight Equipment Malfunctions.
- Ch2 Sec1 Minimum Fuel.
- Ch4 Sec7 Below Minima Report by Pilot.
- Ch5 Sec2 Emergency Code Assignment.
- Ch10 Sec1 General.
- Ch10 Sec2 Emergency Assistance.
- Ch10 Sec3 Overdue Aircraft.
- Ch10 Sec4 Control Actions.

NAVAIR 00-80T-114
- Ch3 Facility Operation.
- Ch3 Security of Facilities.
- Ch3 Aircraft Accidents and Incidents.
- Ch3 Operational Errors/Deviations.

KTWR-315

Topic. Weather knowledge applied in a Tower Local Control environment.

Reference

FAA 7110.65
- Ch2 Sec6 Weather Information.
- Ch2 Sec7 Altimeter Settings.
- Ch2 Sec8 Runway Vsby Reporting – Terminal.
- Ch2 Sec9 ATIS Procedures.
- Ch3 Sec1 Low Level Windshear Advisories.

FAA 7210.3L
- Ch12 Sec3 Operations.
- Ch16 Aviation Meteorological Services and Equipment.

Local publications.

KTWR-316

Topic. Airfield lighting knowledge applied in a Tower Local Control environment.

Reference

FAA 7110.65
- Ch3 Sec4 Emergency Lighting.
- Ch3 Sec4 Runway End Identifier Lights.
- Ch3 Sec4 VASI Lights.
- Ch3 Sec4 Approach Lights.
- Ch3 Sec4 ALS Intensity.
- Ch3 Sec4 Sequenced Flashing Lights.
- Ch3 Sec4 MALS.
- Ch3 Sec4 ALSF-2.
- Ch3 Sec4 Runway Edge Lights.
- Ch3 Sec4 High Intensity Runway, Centerline Lights.
- Ch3 Sec4 HIRL Associated With MALSR.
- Ch3 Sec4 HIRL Changes.
- Ch3 Sec4 Medium Intensity Runway Lights.
- Ch3 Sec4 Simultaneous Approach/Runway Edge.
- Ch3 Sec4 High Speed Turnoff Light.
- Ch3 Sec4 Taxiway Lights.
- Ch3 Sec4 Obstruction Lights.
- Ch3 Sec4 Rotating Beacon.

FAA 7210.3

Ch12 Sec6 Airport Lighting.
NAVAIR 51-50AAA-2 (All Airfield markings).
Local publications.

KTLC-340

Topic. Communications in a Tower Local Control environment.

Reference

FAA 7110.65
Ch2 Sec4 Radio and Interphone Communications.
Ch3 Sec2 Light Signals.
Local publications.

KTLC-341

Topic. Clearance/coordination applied in a Tower Local Control environment.

Reference

FAA 7110.65
Ch2 Sec5 Route and Navaid Description.
Ch3 Sec9 Take Off Clearances.
Ch3 Sec9 Cancellation of Take Off Clearance.
Ch3 Sec11 Helicopter Takeoff Clearance.
Ch4 Sec2 Clearances.
Ch4 Sec3 Procedures.
Ch4 Sec4 Route Use.
Ch4 Sec4 Route Structure Transitions.
Ch4 Sec4 Class "G" Airspace.
Ch4 Sec5 Flight Direction.
Ch4 Sec5 Exceptions.
Ch4 Sec5 Lowest Usable Flight Level.
Local publications.

KTLC-342

Topic. Spacing/sequencing/separation applied in a Tower Local Control environment.

Reference

FAA 7110.65
Ch3 Sec8 Spacing and Sequencing.
Ch3 Sec9 Departure Procedures/Separation.
Ch3 Sec10 Arrival Procedures/Separation.
Ch3 Sec11 Helicopter Departure Separation.
Ch3 Sec11 Helicopter Arrival Separation.
Ch3 Sec11 Simultaneous Landing/Takeoffs.
Ch3 Sec11 Helicopter Landing Clearance.
Ch3 Sec12 Sea Lane Operations.
Ch5 Sec5 Minima.
Ch5 Sec8 Successive Simultaneous Departures.
Ch5 Sec8 Departure and Arrival.
Ch5 Sec8 Departures/Arrivals on Parallel or Non-Intersecting Diverging Runways.
Ch7 Sec2 Visual Separation.
Ch7 Sec5 SVFR.
Local publications.

KTLC-343

Topic. Letters of Agreement and Facility Directives/Memos/Publications applied in a Tower Local Control environment.

Reference

| | |
|---|---|
| FAA 7220.1 | Operational Position Standards. |
| FAA 7110.65 | Air Traffic Control. |
| FAA 7210.3 | Facility Operations. |
| FAA 7340.1 | Contractions Manual. |
| FAR 91 | General Operating. |
| AIM | Airman's Information Manual. |
| AOM | Airfield Operations. |
| ATC FacMan | Facility Operations. |
| IFR Supplement. | |
| VFR Supplement. | |
| NOTAMS | General Notices. |
| AP1B | Military Training Route. |
| Local Sectional. | |
| SECNAVINST 5216.5C | Memorandum of Understanding. |
| NAVAIR 00-80T-114 | |
| Ch 3 | Facility Management. |
| Appendix C | Sample Format for FAA/USN Letter of Agreement Concerning Control of Air Traffic. |
| Appendix D | Memorandum of Agreement. |
| RATCF DAIR Operator's Manual. | |
| Low Altitude United States. | |
| High Altitude United States. | |
| Local publications. | |

5. Radar Section

KRDR-220

Topic. Radar equipment.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| Ch5 | Sec1 | Presentation and equip/performance. |
| Ch5 | Sec1 | Alignment check. |
| Ch5 | Sec1 | Radar use. |
| Ch5 | Sec1 | Beacon range accuracy. |
| Ch5 | Sec1 | Electronic cursor. |
| Ch5 | Sec2 | Standby/low sensitivity operation. |
| Ch5 | Sec2 | Inoperative interrogator. |
| Ch5 | Sec2 | In-flight deviations from transponder. |
| Ch5 | Sec2 | Altitude filters. |
| Ch5 | Sec15 | Automated Radar Terminal Systems (ARTS) - Terminal. |
| Ch5 | Sec16 | TPX-42 – Terminal. |
| FAA 7210.3L | | |
| Ch3 | Sec1 | General. |
| Ch3 | Sec7 | Radar Use. |
| Ch3 | Sec8 | Video Maps. |
| NAVAIR 00-80T-114 | | |
| Ch2 | | Airport Facilities. |
| Ch7 | | Equipment (Radar). |
| Appendix J | | Certification, Rating, and Quality Assurance Program. |

| | | |
|---|---|---|
| | Appendix O | Precision Approach Landing System Approach Criteria. |
| Local publications. | | |

KRDR-221

Topic. Strip marking.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| | Ch2 Sec2 | Flight Plans and Control Information. |
| | Ch2 Sec3 | Flight Progress Strips. |
| Local publications. | | |

KRDR-320

Topic. Radar equipment knowledge applied in a Radar Approach Control environment.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| | Ch5 Sec1 | Presentation/Equipment Check. |
| | Ch5 Sec1 | Alignment Check. |
| | Ch5 Sec1 | Radar Use. |
| | Ch5 Sec1 | Beacon Range Accuracy. |
| | Ch5 Sec1 | Electronic Cursor. |
| | Ch5 Sec2 | Standby/Low Sensitivity Operation. |
| | Ch5 Sec2 | Inoperative/Malfunctioning Interrogator. |
| | Ch5 Sec2 | In-Flight Deviations from Transponder. |
| | Ch5 Sec2 | Altitude Filters. |
| | Ch5 Sec15 | ARTS – Terminal. |
| | Ch5 Sec16 | TPX-42 – Terminal. |
| FAA 7210.3L. | | |
| | Ch3 Sec1 | General. |
| | Ch3 Sec7 | Radar Use. |
| | Ch3 Sec8 | Video Maps. |
| NAVAIR 00-80T-114 | | |
| | Ch2 Sec6 | Airport Facilities. |
| | Ch7 Sec2 | Equipment (Radar). |
| | Appendix J | Certification, Rating, and Quality Assurance Program. |
| | Appendix O | Precision Approach Landing System Approach Criteria. |

KRDR-321

Topic. Local area/airfield specific knowledge applied in a Radar Approach Control environment.

Reference

| | | |
|---|---|---|
| FAA 7110.65 | | |
| | Ch3 Sec3 | Arresting System Operation. |
| | Ch3 Sec5 | Selection. |
| Facility Manual | | Airfield Weather Minimums. |
| | | Type aircraft assigned each local Squadron. |
| | | Modex/Tactical call of each local squadron. |
| | | Traffic patterns and NAVAID procedures. |
| | | Alternate/Divert airfield. |

Adjacent airfields.
Airport surface area description (FAA 7400.8).
Facility Frequencies.

KRDR-322

Topic. General ATC knowledge applied in a Radar Approach Control environment.

Reference

FAA 7110.65
Ch1 Sec1 General.
Ch1 Sec2 Terms of Reference.
Ch2 Sec1 General.
Ch2 Sec2 Forwarding Amended And UTM Data.
Ch2 Sec4 Radio and Interphone Communication.
Ch2 Sec8 RVR - Terminal (ARR,DPT,APC).
Ch2 Sec10 Team Position Responsibilities.
Ch3 Sec1 Establishing Two-Way Communications.
Ch9 Sec1 General (Special Flights).
Ch10 Sec1 General (Emergencies).
Glossary Terms.
Additional Service.
Advisory Frequencies.
Aerial Refueling.
Affirmative.
Roger.
Wilco.
Aircraft Classes.
AirMet.
Approach Gate.
Final Approach Fix.
Final Approach Course.
Decision Height.
Overhead Approach.
Pilots Discretion.
PIREP.
Preferential Routing.
Procedure Turn.
Segments of Instrument Approach.
Short Range Clearances.
Simulated Flameout.
Published Missed Approach.
Tower En Route Service.
Local publications.

KRDR-323

Topic. Strip marking applied in a Radar Approach Control environment.

Reference

FAA 7110.65
Ch2 Sec2 Flight Plans and Control Information.
Ch2 Sec3 Flight Progress Strips.
Local publications.

KRDR-324

Topic. Emergency/Safety applied in a Radar Approach Control environment.

Reference

FAA 7110.65
- Ch2 Sec1 In-flight Equipment Malfunction.
- Ch2 Sec1 Minimum Fuel.
- Ch4 Sec7 Below minima report by pilot.
- Ch5 Sec2 Emergency Code Assignment.
- Ch10 Sec1 General.
- Ch10 Sec2 Emergency Assistance.
- Ch10 Sec3 Overdue Aircraft.
- Ch10 Sec4 Control Actions.

NAVAIR 00-80T-114
- Ch3 Facility Operation.
  Security of Facilities.
  Aircraft Accidents/Incidents.
  Operational Errors/Deviations.

Local publications.

KRDR-325

Topic. Weather knowledge applied in an Approach Control environment.

Reference

FAA 7110.65
- Ch2 Sec6 Weather Information.
- Ch2 Sec7 Altimeter Settings.
- Ch2 Sec8 Runway Vsby Reporting – Terminal.
- Ch2 Sec9 ATIS Procedures.
- Ch3 Sec1 Low Level Windshear Advisories.

FAA 7210.3L
- Ch12 Sec3 Operations.
- Ch16 Aviation Meteorological Services and Equipment.

Local publications.

KRFD-250

Topic. Phraseology/Communications.

Reference

FAA 7110.65
- Ch4 Sec7 Single frequency approaches (SFA).
- Ch4 Sec8 Communications release.
- Ch4 Sec2 Clearance relay.
- Ch5 Sec4 Terms (Transfer of Radar ID).
- Ch5 Sec6 Methods (Vectoring).
- Ch5 Sec7 Application (Speed Adjustment).

Local publications.

KRFD-251

Topic. Clearance/Coordination.

Reference

FAA 7110.65

Ch4 Sec2 ALTRV Clearances.
Ch4 Sec2 Clearance Items.
Ch4 Sec3 Departure Terminology.
Ch4 Sec3 Departure Restrictions, Clearance Void Times, Hold for Release, and Release Times.
Ch4 Sec3 VFR Release of IFR Departure.
Ch4 Sec5 Flight Direction.
Ch4 Sec5 Exceptions.
Ch4 Sec5 Lowest Usable Flight Level.
Ch4 Sec4 Altitude Information.
Ch4 Sec5 Anticipated Altitude Changes.
Ch4 Sec6 Clearance Beyond Fix.
Ch4 Sec6 Unmonitored NAVAIDS.
Ch4 Sec6 ILS Protection/Critical Areas.
Ch4 Sec7 Clearance Information.
Ch4 Sec8 Approach Clearance.
Ch4 Sec8 Clearance Limit.
Local publications.

KRFD-252

Topic. Letters of Agreement and Facility Directives/Memos/Publications.

Reference

FAA 7220.1 Operational Position Standards.
FAA 7110.65 Air Traffic Control.
FAA 7210.3 Facility Operations.
FAA 7340.1 Contractions Manual.
FAR 91 General Operating.
AIM Airman's Information Manual.
AOM Airfield Operations.
ATC FacMan Facility Operations.
IFR Supplement.
VFR Supplement.
NOTAMS General Notices.
AP1B North America Military Training Route.
Local Sectional
SECNAVINST 5216.5C Memorandum of Understanding.
NAVAIR 00-80T-114
Ch3 Facility Management.
Appendix C Sample Format for FAA/USN Letter of Agreement Concerning Control of Air Traffic.
Appendix D Memorandum of Agreement.
RATCF DAIR Operator's Manual.
Low Altitude United States.
High Altitude United States.
Local publications.

KRFC-253

Topic. Phraseology/Communications.

Reference

FAA 7110.65
Ch2 Sec1 Wheels Down Check.
Ch2 Sec4 Radio and Interphone.
Ch4 Sec2 Clearance Relay.
Ch4 Sec7 Single Frequency Approaches (SFA).
Ch4 Sec8 Communications Release.

Ch5 Sec4 Terms.
Ch5 Sec6 Methods (Vectoring).
Ch5 Sec7 Application (Radar Approaches).
Ch5 Sec10 No-Gyro Approach.
Ch5 Sec10 Lost Communications.
Ch5 Sec10 Radar Contact Lost.
Ch5 Sec10 Landing Check.
Ch5 Sec10 Position Information.
Ch5 Sec10 Final Controller Changeover.
Ch5 Sec10 Communications Check.
Ch5 Sec10 Transmission Acknowledgment.
Ch5 Sec10 Missed Approach.
Ch5 Sec10 Low Approach and Touch-and-Go.
Ch5 Sec10 Tower Clearance.
Ch5 Sec10 Final Approach Abnormalities.
Ch5 Sec10 Military Single Frequency Approaches.
Ch5 Sec11 Surveillance Approach.
Ch5 Sec12 Precision Approach Radar.
Ch5 Sec13 Use of PAR for Approach Monitoring.
Local publications.

KRFC-254

Topic. Clearance/coordination.

Reference

FAA 7110.65
Ch3 Sec1 Low Level Windshear Advisories.
Ch3 Sec10 Altitude Restricted Approach.
Ch4 Sec8 Circling Approach.
Ch4 Sec8 Missed Approach.
Ch4 Sec8 Low Approach and Touch-and-Go.
Local publications.

KRFC-255

Topic. Separation knowledge.

Reference

FAA 7110.65
Ch2 Sec1 Formation flights.
Ch2 Sec1 Wake turbulence.
Ch2 Sec1 Wake turbulence advisories.
Ch2 Sec1 Traffic advisories.
Ch2 Sec1 Bird activity information.
Ch3 Sec1 Traffic information.
Ch4 Sec5 Vertical separation minima.
Ch5 Sec3 ARTS / PIDP ident methods.
Ch5 Sec3 Questionable identification.
Ch5 Sec4 Methods (Transfer of Radar ID).
Ch5 Sec4 Traffic (Radar Separation).
Ch5 Sec5 Application.
Ch5 Sec5 Target separation.
Ch5 Sec5 Minima (Radar separation).
Ch5 Sec5 Additional separation for formation flights.
Ch5 Sec9 Approach separation responsibility.
Ch7 Sec2 Visual separation.
Local publications.

KRFC-256

Topic. Letters of Agreement and Facility Directives/Memos/Publications.

Reference

| | |
|---|---|
| FAA 7220.1 | Operational Position Standards. |
| FAA 7110.65 | Air Traffic Control. |
| FAA 7210.3 | Facility Operations. |
| FAA 7340.1 | Contractions Manual. |
| FAR 91 | General Operating. |
| AIM | Airman's Information Manual. |
| AOM | Airfield Operations. |
| ATC FacMan | Facility Operations. |
| IFR Supplement . | |
| VFR Supplement . | |
| NOTAMS | General Notices. |
| AP1B | North American Military training route. |
| Local Sectional | |
| SECNAVINST 5216.5C | Memorandum Of Understanding. |
| NAVAIR 00-80T-114 | |
| Ch3 | Facility Management. |
| Appendix C | Sample Format for FAA/USN Letter of Agreement Concerning Control of Air Traffic. |
| Appendix D | Memorandum of Agreement. |
| RATCF DAIR Operator's Manual. | |
| Low Altitude United States . | |
| High Altitude United States. | |
| Local publications. | |

KDLC-263

Topic. Data link theory.

Requirement. Explain data link theory to include:

- Identify the characteristics of each of the five existing TADILs.
- Identify the meaning of data link reference point (DLRP), unit system coordinate center (USCC), unit position (UPOS).
- Identify the difference between the data grid and the display grid.
- Identify the capabilities of each services' command and control agencies to conduct one or more of the five data links.
- Specific considerations for data link operation.
- Describe the use of filters with TADIL-B.
- Identify voice nets to be activated for joint service operations
- List major considerations for selecting TADIL systems.
- List major considerations in the following MACCS interfaces:
  - TADIL-A.
  - TADIL-B.
  - ATDL-1.
  - TADIL-C.
  - TADIL-J.

Reference. MAWTS-1 "MACCS Data Link Interoperability (U)(#11214)", MAWTS-1 "Data Link Theory (#10437)".

KDLC-264

Topic. MATCALS Tactical Digital Information links (TADIL) B and C.

Requirement. Describe the use and capability of MATCALS TADIL-B and -C to include:

- Establishing and exiting TADIL-B circuits.
- Emergency circuit exit TADIL-B.
- Use of Filters with TADIL-B.
- Mode I, ACLS, TADIL-C.
- Mode II, ACLS, TADIL-C.

Reference. MAWTS-1 ASP.

KAPC-350

Topic. Advanced ATC applied in a Radar Approach Control environment.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch4 | Sec1 | NAVAID Use Limitation. |
| Ch4 | Sec5 | Altitude Assignment/Verification. |
| Ch4 | Sec6 | Holding Aircraft. |
| Ch4 | Sec7 | Arrival Procedures. |
| Ch5 | Sec1 | General. |
| Ch5 | Sec2 | Beacon Systems. |
| Ch5 | Sec6 | Vectoring. |
| Ch5 | Sec7 | Speed Adjustments. |
| Glossary Terms (All applicable terms). | | |

KAPC-351

Topic. Advanced airfield specific knowledge applied in a Radar Approach Control environment.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch2 | Sec1 | NAVAID Malfunctions. |
| Ch2 | Sec1 | Military Procedures. |
| Ch2 | Sec5 | NAVAID Terms. |
| Ch2 | Sec5 | NAVAIDS Fixes. |
| Ch3 | Sec1 | Observed Abnormalities. |
| Ch3 | Sec3 | Landing Area condition. |
| Ch3 | Sec3 | Timely Information. |
| Ch3 | Sec3 | Braking Action. |
| Ch3 | Sec3 | Braking Action Advisories. |
| Ch3 | Sec3 | Arresting System Operation. |
| Ch3 | Sec5 | Selection. |
| Ch3 | Sec5 | STOL Runways. |
| Ch3 | Sec5 | Tailwind Components. |
| Ch4 | Sec4 | Route Use. |
| Ch4 | Sec4 | Route Structure Transitions. |
| Ch4 | Sec4 | Degree-Distance Route. |
| Ch4 | Sec4 | Alternative Routes. |
| Ch4 | Sec6 | Holding Instructions. |
| Ch4 | Sec7 | Switching ILS / MLS Runways. |
| Ch5 | Sec2 | Assignment Criteria. |
| Ch5 | Sec2 | Discrete Environment. |
| Ch5 | Sec2 | Non-Discrete Environment. |
| Ch5 | Sec2 | Mixed Environment. |
| Ch5 | Sec2 | Automatic Altitude Reporting. |
| Ch5 | Sec2 | Beacon Termination. |

| | | |
|---|---|---|
| Ch5 | Sec3 | Position Information. |
| Ch5 | Sec7 | Application. |
| Ch5 | Sec9 | Arrival Instructions. |
| Ch5 | Sec10 | Application. |
| Ch5 | Sec10 | Approach Information. |
| Ch9 | Sec1 | General. |
| Ch9 | Sec1 | Special Handling. |
| Ch9 | Sec1 | Flight Check Aircraft. |

FAA 7210.3L

| | | |
|---|---|---|
| Ch12 | Sec6 | Airport Lighting. |

NAVAIR 00-80T-114

| | | |
|---|---|---|
| Ch9 | | Terminal Instrument Approach Procedures. |
| Ch9 | | Standard Instrument Departure and Standard Terminal Arrival Procedures. |
| Ch9 | | Terminal Instrument Procedures at Airports Not Operated Or Tenanted Buy a Naval Command. |
| Appendix A | | Memorandum of Agreement Between Department of Transportation Federal Aviation Administration, and the U.S. Army, the U.S. Navy, and the U.S. Air Force. |

Local publications.

KAPC-352

Topic. Non-radar knowledge applied in a Radar Approach Control environment.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch1 | Sec2 | Terms of Reference (Review). |
| Ch2 | Sec1 | General (Review). |
| Ch2 | Sec3 | Flight Progress Strips. |
| Ch2 | Sec5 | Route and NAVAID Description. |
| Ch4 | Sec1 | NAVAID Use Limitations (Review). |
| Ch4 | Sec5 | Altitude Assignment/Verification (Review). |
| Ch4 | Sec6 | Holding Aircraft (Review). |
| Ch4 | Sec7 | Arrival Procedures (Review). |
| Ch4 | Sec8 | Approach Clearance Procedures. |
| Ch6 | Sec1 | General. |
| Ch6 | Sec2 | Initial Separation of Successive Departing Aircraft. |
| Ch6 | Sec3 | Initial separation of Departing and Arriving Aircraft. |
| Ch6 | Sec4 | Longitudinal Separation. |
| Ch6 | Sec5 | Lateral Separation. |
| Ch6 | Sec6 | Vertical Separation. |
| Ch6 | Sec7 | Timed Approaches. |

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| | | |
|---|---|---|
| Ch4 | | Naval Certification Procedures. |
| Ch7 | | General (Radar Operations). |
| Ch8 | | Training, Standardization, and Air Traffic Controller Performance Evaluations. |
| Appendix G | | Air Traffic Control Specialist Mishap Statement. |
| Appendix I | | Minimum Altitude Vectoring Chart. |

KAPC-353

Topic. Coordination in a Radar Approach Control environment.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch2 | Sec1 | Reporting Essential Flight Info. |

Ch2 Sec1 Coordinate Use of Airspace.
Ch2 Sec1 Control Transfer.
Ch2 Sec1 Surface Areas.
Ch2 Sec1 Supervisory Notification.
Ch2 Sec4 Monitoring (Radar & Interphone Comm).
Ch2 Sec4 Authorized Interruptions.
Ch2 Sec4 Authorized Relays.
Ch3 Sec10 Altitude Restricted Low Approach.
Ch4 Sec2 Clearance Prefix.
Ch4 Sec3 Departure Clearances.
Ch4 Sec3 Abbreviated Departure Clearance.
Ch4 Sec3 Delay Sequencing.
Ch4 Sec3 Forward Departure Delay Info.
Ch4 Sec3 Coordination W/Receiving Facility.
Ch4 Sec3 Forwarding Departure Times.
Ch4 Sec8 Circling Approach.
Ch4 Sec8 Missed Approach.
Ch4 Sec8 Low Approach and Touch-And-Go.
Ch5 Sec2 Radar Beacon Code Changes.
Ch5 Sec2 Radio Failure.

Local publications.

KAPC-354

Topic. Clearance knowledge applied in a Radar Approach Control environment.

Reference

FAA 7110.65

Ch2 Sec1 TCAS Resolution Advisories.
Ch4 Sec2 ALTRV Clearances.
Ch4 Sec2 Clearance Items.
Ch4 Sec3 Departure Terminology.
Ch4 Sec3 Departure Restrictions, Clearance Void Times, Hold for Release, and Release Times.
Ch4 Sec3 VFR Release of IFR Departure.
Ch4 Sec5 Vertical Separation Minima.
Ch4 Sec5 Flight Direction.
Ch4 Sec5 Exceptions.
Ch4 Sec5 Lowest Usable Flight Level.
Ch4 Sec5 Altitude Information.
Ch4 Sec5 Anticipated Altitude Changes.
Ch4 Sec6 Clearance Beyond Fix.
Ch4 Sec6 Visual Holding Points.
Ch4 Sec6 Holding Flight Path Deviation.
Ch4 Sec6 Unmonitored NAVAIDS.
Ch4 Sec6 ILS Protection/Critical Areas.
Ch4 Sec7 Clearance Information.
Ch4 Sec8 Approach Clearance.
Ch4 Sec8 Clearance Limit.
Ch4 Sec8 Specifying Altitude.
Ch4 Sec8 Circling Approach.
Ch5 Sec7 Minima.
Ch5 Sec7 Termination.
Ch5 Sec8 Procedures.
Ch5 Sec8 Initial Heading.
Ch5 Sec8 Successive/Simultaneous Departures.
Ch5 Sec8 Departure And Arrival.
Ch5 Sec8 Departures And Arrivals On Parallel Or Non-Intersecting diverging Runways.

| | | |
|---|---|---|
| Ch5 | Sec16 | All. |
| Ch7 | Sec1 | Approach Control Service for VFR Arriving Aircraft. |
| Ch7 | Sec2 | Visual Separation. |
| Ch7 | Sec4 | Visual Approach. |
| Ch7 | Sec4 | Vectors for Visual Approach. |
| Ch7 | Sec4 | Clearances for Visual Approach. |
| Ch7 | Sec4 | Approaches to Multiple Runways. |
| Ch7 | Sec4 | Contact Approach. |
| Ch7 | Sec5 | Special VFR. |
| Ch7 | Sec6 | Basic Radar Service To VFR Aircraft – Terminal |
| Ch9 | Sec4 | Avoidance. |
| Ch9 | Sec5 | Fuel Dumping. |
| Ch9 | Sec6 | Jettisoning of External Stores. |
| Ch9 | Sec8 | Class D Airspace. |
| Ch9 | Sec8 | Other Control Airspace. |

Local publications.

KAPC-355

Topic. Spacing/Sequencing applied in a Radar Approach Control environment.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch3 | Sec1 | Traffic Information. |
| Ch3 | Sec9 | Same Runway Separation. |
| Ch3 | Sec9 | Intersecting Runway Separation. |
| Ch3 | Sec10 | Same Runway Separation. |
| Ch3 | Sec10 | Intersecting Runway Separation. |
| Ch3 | Sec10 | Altitude Restricted Low Approach. |
| Ch3 | Sec10 | Closed Traffic. |
| Ch3 | Sec10 | Simulated Flameout (SFO) Approaches/Practice Precautionary Approaches. |
| Ch4 | Sec2 | ALTRV Clearances. |
| Ch4 | Sec3 | Departure Restrictions, Clearance Void Times, Hold for Release, and Release Times. |
| Ch4 | Sec5 | Altitude Information. |
| Ch4 | Sec5 | Anticipated Altitude Changes. |
| Ch4 | Sec8 | Missed Approach. |
| Ch5 | Sec4 | Methods. |
| Ch5 | Sec4 | Traffic. |
| Ch5 | Sec5 | Application. |
| Ch5 | Sec5 | Target Separation. |
| Ch5 | Sec5 | Minima. |
| Ch5 | Sec5 | Passing or Diverging. |
| Ch5 | Sec5 | Additional Separation for Formation Flights. |
| Ch5 | Sec4 | Separation From Obstructions. |
| Ch5 | Sec8 | Procedures. |
| Ch5 | Sec8 | Initial Heading. |
| Ch5 | Sec8 | Successive/Simultaneous Departures. |
| Ch5 | Sec8 | Departure And Arrival. |
| Ch5 | Sec8 | Departures And Arrivals On Parallel Or Non-Intersecting diverging Runways. |
| Ch5 | Sec9 | Approach Separation Responsibility. |
| Ch7 | Sec2 | Visual Separation. |
| Ch7 | Sec6 | Basic Radar Service To VFR Aircraft – Terminal. |

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| | |
|---|---|
| Ch4 | Naval Certification Procedures. |
| Ch7 | General (Radar Operations). |

| | | |
|---|---|---|
| Ch8 | | Training, Standardization, and Air Traffic Controller Performance Evaluations. |
| Appendix G | | Air Traffic Control Specialist Mishap Statement. |
| Appendix I | | Minimum Altitude Vectoring Chart. |

Local publications.

KAPC-356

Topic. Phraseology/Communications applied in a Radar Approach Control environment.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch2 | Sec4 | Radio/Interphone Communications. |
| Ch3 | Sec1 | Establishing Two-way. |
| Ch4 | Sec2 | Clearance Prefix. |
| Ch4 | Sec3 | Departure Clearances. |
| Ch4 | Sec3 | Abbreviated Departure Clearance. |
| Ch4 | Sec3 | Delay Sequencing. |
| Ch4 | Sec3 | Forward Departure Delay Info. |
| Ch4 | Sec3 | Coordination W/Receiving Facility. |
| Ch4 | Sec3 | Forwarding Departure Times. |
| Ch4 | Sec6 | Delays. |
| Ch4 | Sec7 | Single Frequency Approaches (SFA). |
| Ch4 | Sec7 | Radio Frequency and Radar Beacon Changes For Military Aircraft. |
| Ch4 | Sec7 | Approach Information. |
| Ch4 | Sec7 | Arrival Information By Approach Control Facilities. |
| Ch4 | Sec8 | Communications Release. |
| Ch5 | Sec2 | Radar Beacon Code Changes. |
| Ch5 | Sec2 | Radio Failure. |
| Ch5 | Sec2 | VFR Code Assignments. |
| Ch5 | Sec2 | Failure to Display. |

Local publications.

KAPC-357

Topic. Separation knowledge applied in a Radar Approach Control environment.

Reference

FAA 7110.65

| | | |
|---|---|---|
| Ch4 | Sec5 | Vertical Separation Minima. |
| Ch4 | Sec6 | Clearance Beyond Fix. |
| Ch4 | Sec6 | Visual Holding Points. |
| Ch4 | Sec6 | Holding Flight Path Deviation. |
| Ch4 | Sec6 | Unmonitored NAVAIDS. |
| Ch4 | Sec7 | Transfer of Jurisdiction. |
| Ch4 | Sec8 | Approach Clearance. |
| Ch4 | Sec8 | Clearance Limit. |
| Ch4 | Sec8 | Circling Approach. |
| Ch4 | Sec8 | Missed Approach. |
| Ch4 | Sec8 | Practice Approaches. |
| Ch4 | Sec8 | Low Approach and Touch and Go. |
| Ch5 | Sec2 | Validation of Mode C Readout. |
| Ch5 | Sec2 | Altitude Confirmation - Mode C. |
| Ch5 | Sec2 | Altitude Confirmation-Non Mode C. |
| Ch5 | Sec3 | Application. |
| Ch5 | Sec3 | Primary Radar Identification Methods. |

| | | |
|---|---|---|
| Ch5 | Sec3 | Beacon Identification Methods. |
| Ch5 | Sec3 | ARTS/PIDP Identification Methods. |
| Ch5 | Sec3 | Questionable Identification. |
| Ch5 | Sec4 | Transferring Controller Handoff. |
| Ch5 | Sec4 | Receiving Controller Handoff. |
| Ch5 | Sec4 | Point Out. |
| Ch5 | Sec5 | Application. |
| Ch5 | Sec5 | Target Separation. |
| Ch5 | Sec5 | Minima. |
| Ch5 | Sec5 | Passing or Diverging. |
| Ch5 | Sec5 | Additional Separation for Formation Flights. |
| Ch5 | Sec5 | Separation From Obstructions. |
| Ch5 | Sec8 | Procedures. |
| Ch5 | Sec8 | Initial Heading. |
| Ch5 | Sec8 | Successive/Simultaneous Departures. |
| Ch5 | Sec8 | Departure And Arrival. |
| Ch5 | Sec8 | Departures And Arrivals On Parallel Or Non-Intersecting Diverging Runways. |
| Ch5 | Sec9 | Approach Separation. |
| Ch5 | Sec15 | Responsibility (ARTS). |
| Ch5 | Sec15 | System Requirements. |
| Ch5 | Sec15 | Conflict Alert/Mode C Intruder (MCI). |
| Ch5 | Sec15 | Inhibiting Minimum Safe Altitude Warning (MSAW). |
| Ch5 | Sec15 | Track Suspend Function. |
| Ch7 | Sec1 | Approach Control Service for VFR Arriving Aircraft. |
| Ch7 | Sec2 | Visual Separation. |
| Ch7 | Sec5 | SVFR. |

Local publications.

KAPC-358

Topic. Letters of Agreement and Facility Directives/ Facility Memos/Publications as applied in a Radar Approach Control OJT environment.

Reference

| | |
|---|---|
| FAA 7220.1 | Operational Position Standards. |
| FAA 7110.65 | Air Traffic Control. |
| FAA 7210.3 | Facility Operations. |
| FAA 7340.1 | Contractions Manual. |
| FAR 91 | General Operating. |
| AIM | Aeronautical Information Manual. |
| AOM | Airfield Operations. |
| ATC FacMan | Facility Operations. |

IFR Supplement.
VFR Supplement.

| | |
|---|---|
| NOTAMS | General Notices. |
| AP1B | Military Training Route |

Local Sectional

| | |
|---|---|
| SECNAVINST 5216.5C | Memorandum of Understanding. |
| NAVAIR 00-80T-114 | |
| Ch3 | Facility Management. |
| Appendix C | Sample format for FAA/USN Letter of Agreement Concerning Control of Air Traffic. |
| Appendix D | Memorandum of Agreement. |

RATCF DAIR Operator's Manual.
Low Altitude United States.
High Altitude United States.
Local publications.

6. Recommended Knowledge

Title. Introduction to the Joint Tactical Air Operations (JTAO)Interface, JTAO Module 1.

Requirement. Describe the Joint Tactical Air Operations (Managerial Personnel) to include:

- In descending order of responsibility, the officers in a JTAO interface.
- Responsibilities and probable location of each member of the JTAO interface:
  - Area air defense commander.
  - Interface control officer.
  - Track data coordinator.
- Communications nets/circuits used in the interface to carry out the actions of JTAO managerial personnel.

Title. Introduction to Joint Tactical Air Operations (JTAO) Interface, JTAO Module 1.

Requirement. Demonstrate knowledge of Joint Tactical Air Operations (Tactical Procedures) to include:

- How tactical data is entered into a JTAO interface when a unit no longer sends digital information.
- Reasons for using data filters.
- Types of data filters and the information each filter will eliminate from the interface.
- Manner in which "reflexive filtering" is used for both transmission and reception of tactical data.
- Identify which IDENTITY tracks cannot be filtered.
- Types of alerts, their uses, and their order of precedence.
- Sources of non-real-time tracks and the interval in which such tracks are updated within the tactical data system.
- Role of the interface control officer in relation to non-real-time tracks.
- Identify the use of pointers.
- Identify the elements in a digital command message.
- Identify the differences between EMCON and EMREL.

Title. Introduction to Joint Tactical Air Operations (JTAO) Interface, JTAO Module 1.

Requirement. Describe the Joint Tactical Air Operations (Technical Procedures) to include:

- Purpose of the Data Link Reference Point (DLRP), who defines it, and how it is used in a JTAO interface.
- Role of the Data Reference Referral Unit (DRRU), in relation to other JTAO interface units, as well as the basis for its selection.
- Major types of track reporting problems that occur in a JTAO interface.
- Areas in which data differences usually occur and the types of track reporting problems that occur in each.
- Procedures for clarifying conflicts involving data differences and the JTAO manager with authority for resolving such conflicts.
- Types of track reporting problems involving dual designations as well as the causes for each.
- JTAO manager with the authority for resolving problems involving one contact and multiple track numbers.
- JTAO manager with authority for resolving conflicts where multiple tracks have the same number.

Title. Introduction to TADIL operations, JTAO Module 2.

Requirement. Describe the Joint Tactical Air Operations (TADIL operations) to include:

- Types of TADILs used in the US military for joint air control/air defense operation.
- The services which use each type of TADIL.
- Characteristics of each type of TADIL.
- Units or components within each branch of the military that use each type of TADIL.
- Role of a Net Control Station (NCS), a picket, and a forwarding participating unit in a TADIL-A net.
- Differentiate between five types of TADIL-A net operating modes.
- Differentiate between reporting units and forwarding reporting units in a TADIL-B exchange.
- Identify the TADIL-C control units and capabilities in each branch of the military.
- Role of ATDL-1 in a JTAO interface.
- Types of voice coordination nets and their uses in a JTAO interface.

Title. Introduction to TADIL Operations, JTAO Module 2.

Requirement. Describe the Joint Tactical Air Operations communications management to include:

- Factors that affect radio signal transmissions.
- Factors that affect radio wave propagation.
- Uses, controls, and operating characteristics of four JTAO interface voice coordination nets.
- Appropriate frequency bands and frequency ranges for TADIL-A, -B, -C, -J, and ATDL-1.
- Operating characteristics for TADIL-A, -B, -C, -J and ATDL-1.
- Major factors to be considered in the following interfaces:
  - TADIL-A.
  - TADIL-B.
  - TADIL-C.
  - TADIL-J.
  - ATDL-1.
- General factors to be considered in establishing a joint TADIL interface.

Title. Introduction to TADIL Operations, JTAO Module 2.

Requirement. Describe the Joint Tactical Air Operations (OPDAT elements) to include:

- Differentiate between an operational plan and an operational order.
- Who issues the JTAO OPDAT.
- Purpose of the JTAO OPDAT.
- Parts of the OPDAT that relate to TADIL-A and those that relate to TADIL-B.
- What information is contained within each part relating to TADIL-A and TADIL-B and how it is applied to the JTAO interface.
- Parts of the OPDAT that relate to interface duties, areas of responsibility, and zones for airspace management.
- Ways the OPDAT uses to express locations, areas of responsibility, and zones for airspace management.
- Identify the OPDAT part dealing with encryption references.

Title. Airborne Tactical Data System (ATDS), JTAO Module 5.

Requirement. Describe the Navy airborne tactical data system to include:

- Navy's fundamental missions, combat force structure and organization.
- Basic Navy air operations/air defense ATDS platforms, missions, and organization.
- Functions, capabilities, and limitations of the following ATDS platforms:
  - E-2C Hawkeye.
  - S-3 Viking.
  - P-3 Orion.
- Roles, functions, ranks, job titles, and chain of command of key decision-making personnel with the E-2C Hawkeye.
- Naval ATDS platform's interface with tactical air control systems of other services.

Title. Navy Tactical Data System (NTDS), JTAO Module 5.

Requirement. Describe the NTDS to include:

- Navy's fundamental missions, combat force structure and organization.
- Basic Navy air operations/air defense NTDS platforms, their missions, and organization.
- Functions, capabilities, and limitations of the Combat Information Centers (CIC's) on board the following NTDS capable ships:
  - Carrier (CV/CVN).
  - Cruiser (CG).
  - Amphibious Assault Ship (LHA).
  - Amphibious Command Ship (LCC).
- Roles, functions, ranks, job titles, and chain of command of key decision-making personnel associated with the CIC's aboard each type of NTDS equipped ship.
- Tactical data links by which the NTDS equipped ships interface with tactical air control systems of other services.

Title. Ground Elements of the Theater Air Control System (TACS), JTAO Module 6.

Requirement. Describe the Air Force Tactical Air Control System (Ground) to include:

- Fundamental missions, combat force structure, and organization of the Air Force.
- Basic Air Force air control/air defense ground facilities, mission and organization.
- Functions, capabilities, and configurations of the following ground facilities:
  - Tactical Air Control Center (TACC).
  - Control and Reporting Center (CRC).
  - Control and Reporting Post (CRP).
  - Message Processing Center (MPC).
- Roles, functions, ranks, job titles, and chain of command of key decision-making personnel associated with the ground elements.
- Tactical data links by which the Air Force ground elements interface with tactical air control systems of other services.
- Chain of command for HIMAD air defense systems.

Title. Airborne Elements of the Air Control System (AEAC), JTAO Module 7.

Requirement. Describe the Air Force Tactical Air Control System (Airborne) to include:

- Identify the fundamental missions, combat force structure and organization of the Air Force.
- Identify the basic air operations/air defense airborne facilities, their mission and organization within the Air Force Tactical Air Control System.
- Identify the functions, capabilities, and configurations of the following airborne facilities:
  - E-3 Airborne Warning and Control System (AWACS).
  - Airborne Battlefield Command and Control Center (ABCCC).
- Identify the roles, functions, ranks, job titles and chain of command of key decision-making personnel associated with AWACS and the ABCCC.
- Identify the tactical data links utilized by the Air Force airborne facilities.

Title. Army Air Defense Command & Control System (AADCCS), JTAO Module 8.

Requirement. Describe the Army Air Defense Command & Control System (AADCCS) to include:

- Identify the Army mission, combat force structure and organization.
- Identify the basic organization of the Army's air defense artillery (ADA).
- Identify how Army air defense units interface with tactical air control systems of other services.
- Identify the roles, functions, ranks, and job titles of key decision-making personnel within the AADCCS.
- Identify the configurations, functions, and capabilities for the Patriot battalion.
- Identify the chains of command and control for HIMAD air defense systems.

# APPENDIX C

## SYLLABUS EVALUATION

APPENDIX C

SYLLABUS EVALUATION

**1. Event**: ( Number)

**2. Goal**: (enter the T&R syllabus goal)

**3. Requirement**: (enter the T&R condition for the event)

**4. Performance Standards**: (enter the T&R performance standards and how they were met for the event)

**5. Prerequisite(s) Met**: Evaluator's initials:

**6. Additional Comments**:

_____ _____

Evaluator's Signature Date Marine's Signature Date

_____

MATCD Commander/ATCFO Date